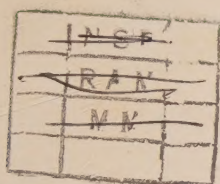


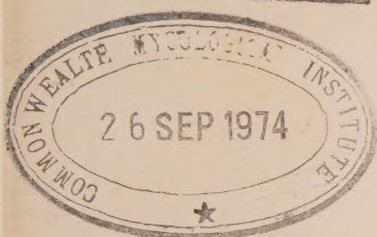
**THE REPUBLIC
OF UGANDA**



THE REPUBLIC OF UGANDA



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**Annual Report
of the
AGRICULTURE
DEPARTMENT**

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AGRICULTURE DEPARTMENT

For the year ended

31st December, 1967

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FOREWORD

Agriculture is by far the most important sector of Uganda's economy. It is highly desirable that the people of Uganda are well and properly fed, but also it is of utmost importance to the country that exports increase, and the quality of produce improves year by year. Improvement of quality is of prime importance in view of falling prices in the world market.

Uganda's dependence on cotton and coffee would lead to economic instability as the quality of these crops can only be improved up to a point. Therefore to sustain a stable economy, the Uganda Government's policy is to increase production of alternative export cash crops such as tea, groundnuts, cocoa, tobacco, sugar and other main crops. At the same time it is planned to increase production of food crops such as rice, wheat, beans and sorghum so as to make the nation self-sufficient.

The year 1967 was one of consolidation in the agricultural sector. In the agricultural education field, for example, there was a 50 per cent increase in the number of diplomates who qualified as Assistant Agricultural Officers over the 1966 figure.

In the field of agricultural mechanization, regionalization was put into effect towards the end of the year. The regionalization plan, aimed at de-centralization, will help to streamline the organisation in the field and rationalize the use of labour and machinery.

The various achievements which were made in the agricultural sector are attributable to the hard work and co-operation between the staff of the Department of Agriculture and the farmers. I commend this spirit of co-operation and do hope that everybody in the country will contribute towards agricultural development and make Uganda a wealthier country than it has been in the past.

J. B. T. KAKONGE,
Minister of Agriculture and Forestry.

THE REPUBLIC OF UGANDA

DEPARTMENT OF AGRICULTURE

Annual Report

For the Year ended 31st December, 1967.

I. INTRODUCTION

(a) Policy

DESPITE GOVERNMENT'S effort to industrialise Uganda's economy, agriculture continued to remain the backbone of the country's economy. The Department of Agriculture continued to direct its efforts towards increasing agricultural production and productivity, and in pursuance of this broad objective, the policy of the Department of Agriculture was based on the following:—

- (i) conserving soil, water and other natural resources;
- (ii) enhancing the natural fertility of the land by the introduction of improved livestock and their integration with arable crops, and to encourage private ownership of land in order to create incentive to look after the land properly;
- (iii) increasing production, improving the quality of cash crops to enable the people to enjoy a better standard of living, and increasing the revenue of the country;
- (iv) increasing the production and quality of industrial crops both for exports and for local industry;
- (v) carrying out research, field experimentation and investigations designed to improve yields and quality of both crops and livestock, and finding out the best methods of land and pasture utilization;
- (vi) supplying planting materials of proven, new and improved crop varieties, and advising on methods of cultivation;
- (vii) maintaining and enlarging a well-informed extension service for imparting to the farming community up-to-date information on all farming aspects, including agricultural credit and marketing;
- (viii) discharging certain statutory obligations in connection with the marketing and processing of crops;
- (ix) executing a vigorous programme of crop diversification to reduce Uganda's reliance on cotton and coffee.

(b) General Review

2. The first and last quarters of this year remained unusually dry, but in general, the weather conditions remained fairly favourable. Because of this, food production greatly improved and famine relief was discontinued in affected areas of Karamoja, Teso and Ankole Districts.

3. The staffing of the extension service was greatly improved as more Assistant Agricultural Officers graduated from the two Agricultural Colleges. A pilot agricultural credit project, to which agricultural extension services were linked, was launched in Bunyoro, Lango, Bukedi and Ankole Districts. The scheme revealed very encouraging results. Various courses were organised for the extension services staff with the objective of improving the standard of extension teaching. The Young Farmers Club of Uganda continued to expand and by the end of the year, there was a total membership of 17,886. The Information and Visual Aids Centre which made a successful debut in 1965 suffered some set-backs. A number of Cinema Vans broke down and it was necessary to obtain spares from the United States of America.

4. The total lint production from the 1966/67 crop amounted to 426,677 bales as compared to 445,181 bales produced in 1965/66. There was a decline in acreage from 2,263,000 acres planted to cotton in 1965/66 season to 2,174,000 acres planted in 1966/67. The total value of lint and seed realised at the Kampala auction and by direct sale was £17,676,372, compared with £19,699,978 in 1965/66. The return to the growers was £10,170,625.

In 1967, 2,148,000 acres were planted and the production of the 1967/68 season estimated at 344,813 bales of lint.

5. The control of cotton pests continued. Approximately 173,225 tins of cotton insecticide were used compared with 95,281 tins in 1966.

6. Coffee production, other than Bugisu *Arabica*, amounted to 149,215 tons of clean coffee worth £13,874,456. The Bugisu *Arabica* crop for the calendar year amounted to 5,876 tons worth £1,389,349. The total value to growers from all types of coffee was £15,263,805 compared with £20,073,479 in 1966.

7. Six thousand two hundred and eighteen (6,218) acres of Arabica coffee were sprayed against *antestia* compared with 21,018 acres in 1966.

8. Interest in tea growing by outgrowers increased considerably and by the end of the year, the acreage planted by them was approximately 7,083 acres. Tea production amounted to 24,783,840 lb. of made tea, an increase of 54,340 lb. over the previous year. The value of the crop was £3,700,000 compared with £4,079,380 in 1966. The fall was due to the effect of devaluation of the £ sterling.

9. The production of tobacco amounted to 3,879 tons of cured leaf valued at £796,339. The estimated value to growers was £576,422. The overseas export of unmanufactured tobacco from Uganda during 1967 consisted of 278,300 lb. valued at £34,004, compared with 1,183,028 lb. valued at £127,883 in 1966.

10. A total of 135,243 tons of sugar was produced, an increase of 9,765 tons over 1966.

11. The number of Group Farms in operation decreased from 43 in 1966 to 30 in 1967. This fall in number occurred mainly because of non-repayment of loans which necessitated the suspension of the group farms in question. Similarly, the total group farm participants decreased from 5,176 in 1966 to 1,843 in 1967. A total of 3,404 acres of cotton were planted in 1967 on group farms.

(c) Liaison with District Administrations and Other Departments

12. In general, there was good relationship and co-operation with officials of District Administrations and the Department of Agriculture. Several joint campaigns to increase agricultural production were launched.

II. WEATHER

13. The weather pattern in 1967 was fairly normal in most areas of the country, although in some areas in Buganda, Kigezi, Bukedi and Bunyoro there was some hail damage to crops. The first and last quarters of the year remained unusually dry, except in Buganda and Bugisu where some heavy rains were received during November. Because of the favourable weather conditions in most areas of the country, crop production greatly increased and in areas where acute food shortages were experienced the previous season, sufficient food was available throughout the year.

III. FOOD CROPS AND FOOD SUPPLIES

14. Because weather conditions remained generally favourable during the year, food supplies were adequate in all parts of the country throughout the year.

IV. ECONOMIC CROPS

(a) Cotton

15. This report deals with the marketing of the 1966/67 crop and the production of the 1967/68 crop.

(1) 1966/67 Season

16. The total revised acreage planted to cotton in 1966 was 2,174,000 acres as compared to 2,263,000 acres in 1965. Crop production was 236,354 tons of seed cotton valued at £10,170,626. Buying started in November and the prices paid to the growers for clean raw cotton was 40 cents per lb. for all types. For stained raw cotton, the price was 25 cents per lb. in all zones.

(2) 1967/68 Season

17. Because of the price paid to growers during the previous season, it was generally felt that acreage planted to cotton would have increased appreciably. Owing to difficulties in marketing, lack of payment on cotton delivery and the possibilities of growing alternative cash crops, the acreage under cotton continued to decline despite a joint cotton production campaign mounted by the

officials of the Department of Agriculture, District Administrations and the District Co-operative Unions. The decline in acreage has been particularly marked in Busoga where the growing of food crops has been gaining considerable importance, especially around Jinja where growing industries with large numbers of employees provided a lucrative market for a large range of food crops. Elsewhere, the decline was not so marked as illustrated in table A.

Table A—Cotton Production 1963/64 to 1967/68
(Thousand Acres)

Zone	1963/64	1964/65	1965/66	1966/67	1967/68
Mengo	164	189	185	147	146
Masaka	27	23	24	21	21
Mubende	70	81	55	56	36
BUGANDA REGION	261	293	264	224	203
Bunyoro	57	74	76	86	94
Kazinga Channel ..	23	20	16	24	25
WESTERN REGION	80	94	92	110	119
Busoga	510	501	578	550	418
Mbale	320	415	497	380	404
Teso	293	292	237	323	394
South Teso Segre- gated	38	39	37	36	36
Usuku	25	28	27	35	37
EASTERN REGION	1,186	1,275	1,376	1,324	1,289
Lango	196	209	210	216	192
East Acholi	108	79	100	97	146
West Acholi	71	64	82	70	44
West Nile/Madi ..	112	124	139	134	154
NORTHERN REGION	487	476	531	517	536
UGANDA ..	2,014	2,138	2,263	2,175	2,147

18. Cotton seed dressing was carried out at specified ginneries and seed was issued free to farmers. Owing to a delay in seed multiplication, there were some difficulties experienced in keeping seed pure, especially in the segregated areas. Senior staff were posted to handle the multiplication scheme.

As usual, great importance was attached to timely cotton seed distribution and in most areas, farmers received seed at the prescribed time. A few areas, especially in West Nile and parts of Acholi, experienced some difficulties with seed distribution.

19. It is difficult to assess to what extent cotton was sprayed. Available information shows that purchases increased from 95,281 tins of insecticides in 1966 to 173,225 tins during the year under review. The increase in the purchases is an indication that cotton spraying is becoming popular. Reports on moderately serious *Lygus* attacks were received from a number of districts. No other major diseases were reported.

(b) Coffee

(1) BUGISU ARABICA 1966/67 CROP

20. Only 7,490 tons of parchment coffee and 352 tons of "buni" were produced during this season compared with 13,023 tons and 83 tons in the previous season. Table B gives the details of production of the crop for the 1965/66 and 1966/67 seasons.

Table B—Bugisu/Sebei Arabica Coffee Production

GRADE	1966/67 Season			1965/66 Season		
	Parchment	Price/lb.	Estimated value to growers	Parchment	Estimated value to growers	Price/lb.
	<i>Tons</i>	<i>Shs. cts.</i>	<i>£</i>	<i>Tons</i>	<i>£</i>	<i>Shs. cts.</i>
"P" ..	34.74	1 80	7,003.6	132.23	26,657.6	1 80
I ..	7,198.44	1 70	1,370,583.0	12,417.42	2,364,276.8	1 70
II ..	254.47	1 00	28,500.7	469.22	52,552.6	1 00
III ..	2.22	0 25	62.2	4.20	117.6	0 25
TOTAL ..	7,489.87	0 50	1,406,149.5	13,023.07	2,443,604.6	0 50
Add BUNI	352.10	—	19,716.6	82.63	4,627.3	—
GRAND TOTAL	—	—	1,425,867.1	—	2,448,231.9	—

(2) BUGISU ARABICA 1967/68 CROP

21. The purchases for the period October-December 1967 were as follows:—

GRADE	1967/68 Season		1966/67 Season	
	Parchment	Price/lb.	Parchment	Price/lb.
	<i>Tons</i>	<i>Shs. cts.</i>	<i>Tons</i>	<i>Shs. cts.</i>
"P"	19.93	1 60	22.69	1 80
I	4,876.51	1 50	5,090.80	1 70
II	—	0 95	0.22	1 00
III	—	0 25	—	0 25
Buni	—	0 40	—	0 50
TOTAL ..	4,896.44	—	5,113.71	—

22. All central pulperies at Lwangoye, Lugu, Lambuli, Buginyanya, Busano and Bumalye were registered as separate societies from the parent society, but this move did not lead to an overall increase in society membership.

23. Coffee trees were fairly well pruned in preparation for coffee spraying early in the year. Instructions were given to the farmers in respect of pruning, application of herbicides, fungicide and fertilizer, but response to the instruction was unsatisfactory. Some 95 tons of fertilizers were bought by the farmers as compared to half a ton during the previous season. These purchases were made on credit through the co-operative societies.

24. Coffee picking started in August and was in full swing in December. Because of unusually wet weather conditions in the coffee areas in October/November, the farmers experienced some difficulties in drying coffee. Marketing commenced in October at the pulperies, and cash was paid on delivery.

(i) *Coffee Replacement Scheme*

25. The replacement scheme was delayed because a new scheme was prepared and was under study. Consequently, very little coffee replacement took place.

(ii) *Coffee Pulperies*

26. Approval for the erection of new pulperies was given and tender for construction was awarded to Messrs. Rao Brothers Limited. Repairs to the old pulperies were necessary and appropriate steps were taken to obtain funds to effect these repairs.

(iii) *Coffee Pests and Diseases*

27. Departmental team spraying was not carried out due to the late release of funds. Farmers, having appreciated the need for spraying, carried out individual coffee spraying, although on a small scale. In June, Coffee Berry Disease was observed and confirmed in Bukigai, and there is great fear that it has already spread southwards.

(3) COFFEE OTHER THAN BUGISU ARABICA

28. The production of *Arabica* coffee in Buganda, Western and Northern Regions amounted to 5,727 tons valued at £1,056,341. The total coffee production for both *Robusta* and *Arabica* in the same areas was 149,215 tons valued at £13,874,456. Prices obtained during the year were as follows:—

Table C—Robusta Prices: Cents per pound

Dates		Dry Cherry	Rough Hulled	Parchment
<i>From</i>	<i>To</i>	<i>Cents</i>	<i>Cents</i>	<i>Cents</i>
1-1-1967	31-12-1967	40	83	75

Table D—Arabica Prices: Shs./cts. per pound

Dates		Dry Cherry	Rough Hulled	Parchment
<i>From</i>	<i>To</i>	<i>Cents</i>	<i>Shs. Cts.</i>	<i>Shs. Cts.</i>
1-7-1967	31-12-1967	74	1 64	1 70

29. In Buganda, there was a decrease in coffee planting and this is attributed to the fact that in this area the farmers are turning to dairy farming. A number of coffee plots were converted to improved pastures to provide grazing for exotic cattle whose numbers are steadily increasing in the Region. In Western and Northern Regions, Arabica coffee expansion has not progressed according to plan due to shortage of funds.

(c) Tobacco

(i) *Flue-Cured*

30. Production of flue-cured tobacco continued to be confined in West Nile, Acholi and Lango Districts of Northern Uganda. In West Nile, the Master growers produced the entire crop which amounted to 3,397,864 lb. of cured leaf from a total of 2,435 acres. The average price per lb. of cured leaf was Shs. 3/21. In Acholi District, a total of 2,000 acres was planted to tobacco which yielded 748,160 lb. of cured leaf, while in Lango District, the acreage planted to tobacco increased from 15½ to 40 acres. As a result of tobacco production expansion, a total yield of 20,160 lb. of cured leaf was realised as compared to 2,129 lb. produced the previous season.

31. Flue-cured tobacco production has been re-organised. In 1967, it was found necessary to introduce the Master Growers Scheme modelled on the West Nile Scheme which has been in operation for some time.

Messrs. British American Tobacco (Uganda) Ltd., in close co-operation with the staff of the Department of Agriculture, introduced the scheme. The main differences between the West Nile and Kigezi Master Growers Schemes are as follows:—

(a) in West Nile, the barn group consists of four growers and in Kigezi of eight growers;

(b) the grower in West Nile is allowed to grow quarter of an acre of Tobacco as against half an acre in Kigezi;

(c) B.A.T. (U) Ltd. finances and/or guarantees loans for the scheme in West Nile, while in Kigezi it is financed through the Co-operative Credit Scheme;

(d) the barns in Kigezi are 12' × 16', while in West Nile they are each 12' × 12';

(e) in West Nile, B.A.T. (U) Ltd. carries out considerable supervisory work, but in Kigezi this is the duty of the extension staff of the Department of Agriculture.

32. The co-operative movement in the district tried unsuccessfully to take over the industry from private business. Kambuga and Bugangari, the pioneer societies, were registered and joined to form the Kigezi Tobacco Co-operative Union Limited with the principal objective of organising growers, marketing their crops and purchasing the then existing factory. These attempts were abandoned. Instead, efforts were concentrated on the Master Growers Scheme.

(ii) *Fire-Cured*

33. Production of this type of tobacco continued to be confined to West Nile, Bunyoro and Mubende Districts. In Bunyoro, the production target was set at 9,000 acres, but owing to adverse weather conditions in the first quarter of the year, only 5,151 acres were planted to tobacco. A total of 1,698,583 lb. of cured leaf was purchased at an estimated value to the growers £34,700. Considerable emphasis was placed on quality during the season.

34. In Mubende, the crop was grown in Buwekula county. Over eighty-nine (89·28) acres were planted compared with 13·8 acres planted to the crop in 1966.

Table E—Bunyoro/Mubende Tobacco Production: Purchases (lb.)

GRADE			I	II	III	IV	TOTAL
Bunyoro	Growers	Co-operative	166,549	693,344	88,694	732,137	1,680,724
Union	..	..					
Mubende	Growers	Co-operative	594	7,254	348	9,663	17,859
Union	..	..					
Mubende District	..	..	881	7,937	474	6,567	15,859
TOTAL			168,024	708,536	89,542	748,367	1,714,442
Grade Percentage, 1967			9.9	41.9	5.3	34.9	100

35. In West Nile, the unfavourable weather conditions during the first quarter of the year did not retard appreciably the planting of tobacco. Five thousand, nine hundred and eight (5,908) acres were planted to tobacco as compared to 4,990 acres in 1966. However, the dry spells affected the crop conditions and the entire crop in the field was rather poor.

36. Marketing commenced in the second week of October, and by the end of the year, the entire crop was bought from the farmers. A total yield of 2,773,706 lb. value at £975,214 was realised. Of the total production, the co-operative societies bought 1,680,580 lb. worth £566,705. The quality of the crop dropped considerably as most of the crop was of Grade IV quality. Table F gives the production of fire-cured tobacco in West Nile.

Table F—Fire-cured Tobacco Production in West Nile

Grade		Yield (lbs.)	Price/lb.	Value (\$hs.)
			<i>Shs. cts.</i>	<i>Shs. cts.</i>
I	..	240,671	1 50	361,006 50
II	..	733,046	1 10	806,350 60
III	..	212,748	0 70	148,923 60
IV	..	1,579,750	0 40	631,900 00
Scrap	..	7,491	0 30	2,247 30
TOTAL		2,773,706	—	1,950,428 00

37. Production of fire-cured tobacco from 1963 to 1967 can be seen in table G.

Table G—Fire-cured Tobacco Production in Uganda, 1963 to 1967
(Thousand lb.)

Year	1963	1964	1965	1966	1967
Bunyoro	2,124	3,545	4,001	1,097	1,699
Mubende	85	173	55	11	16
West Nile	809	1,433	1,993	2,358	2,774
TOTAL	3,017	5,152	6,050	3,466	4,488

(d) Tea

In 1967, Uganda Tea Growers Corporation became responsible for outgrower tea development, and Department of Agriculture Extension staff were posted to the Corporation.

The tea crop suffered from a prolonged hot dry spell in the early part of the year, especially in Bunyoro and parts of Kigezi and Toro, but recovered well when rains did eventually arrive.

In all districts in Western Region, planting targets were reached. The acreage under tea, the number of growers and total production can be seen from the following tables:—

Table H—Acreage under Tea: Western Region

Plantings	Toro	Ankole	Kigezi	Bunyoro	Western Region
1967 ..	671	449	230	146	1,496
1966 ..	152	65	528	34	779
1965 ..	120	69	—	13	202

Table J—Number of Tea-growers: Western Region

Year	Toro	Ankole	Kigezi	Bunyoro	Western Region
1967 ..	828	718	668	142	2,296
1966 ..	152	322	528	34	1,036
1965 ..	120	69	—	13	202

Table K—Green Leaf Production: Western Region

District	1963	1964	1965	1966	1967
Ankole	17,314	101,163	213,429	455,863	1,367,677
Toro	?	1,580,404	2,893,288	9,343,893	10,546,683
Kigezi	—	90,879	229,245	539,925	629,349
Bunyoro	—	—	713	19,070	43,449
TOTAL ..	17,314	1,771,446	3,336,675	10,338,751	12,587,158

Prices paid to growers varied from factory to factory. The devaluation of the Pound Sterling reduced the average price from 40 cents per lb. to 30–32 cents per lb. before Government fixed a guaranteed price of 40 cents per lb.

Estimated value of the crop to tea-growers was £227,033 as compared to £184,499 in 1966.

(e) Sugar

38. The sugar-cane outgrowers continued to expand during the year, especially in Kyagwe county in East Mengo and in Buddu county in Masaka. A total of 2,734 acres were planted by 2,500 outgrowers in the Region.

39. In Busoga, 2,500 acres were grown by outgrowers in the district. There were some difficulties in obtaining transport, and the Madhvani Sugar Works and the Jaggery producers raised some complaint in respect of poor quality cane being delivered.

40. The clearing of the 5,000 acres surveyed in Aber sub-county in West Lango continued and seed canes were planted on 110 acres, but cane had to be used for jaggery production as interest in sugar growing in the area waned.

41. Total sugar production in 1967 was 135,243 tons as compared to 125,478 tons produced in 1966. The total value was £5,462,755 as compared to £5,107,620 in 1966.

(f) Cocoa

42. The crop continued to be grown in Kyagwe and Bugerere counties in East Mengo District. The cocoa trials at Mwera in Mubende and Namwoya in East Mengo were maintained. Owing to shortage of funds, no seedlings were raised for planting and consequently, the acreage under this crop in Buganda remained at 1,564 acres. However, by the end of the year, some 455,000 seedlings were grown in preparation for planting 910 acres in 1968.

43. Cocoa pods worth Shs. 23,302/20 were collected as compared to the collection worth Shs. 41,184/10 made in 1966. This decline is attributed to a declining interest in cocoa production by the farmers caused by poor prices, disease attack and vermin damage which led to considerable loss in crop production.

44. In Busoga, cocoa planted on 163 acres in Bugabula, Butembe-Bunya and Kigulu counties continued to grow well, but destruction of pods by vermin remained the greatest problem. A total of 19,998 lb. was bought from the farmers at 5½ cents per lb.

45. The nursery work at Ikulwe and Kagoma sites was resumed and efforts were being made to raise enough seedlings to plant 300 acres in 1968.

46. In Western Region, the growing of cocoa continued to be confined to Bwamba county of Toro, Bujenje and Bugahya counties of Bunyoro. Unfavourable weather conditions during the first quarter of the year affected crop production, especially in Bunyoro.

47. No planting took place during the year as there were no funds to raise seedlings, and the acreage under cocoa remained at 349 acres in Bunyoro and 203 acres in Toro. Bunyoro produced pods totalling 5,981 lb. as compared to 6,782 lb. produced in 1966. The decrease in yield is attributed to unfavourable weather conditions during the first quarter of the year. No yield figures are available for Toro.

(g) Citrus

48. Citrus has recently gained appreciable importance in local markets and the Government correspondingly increased its attention to the production of the crop. Plans were drawn to establish citrus plantations in Kiige in Busoga. The nursery work at Kasolwe continued under the supervision and guidance of the Citrus Expert and the Officer-in-charge, Citrus Development Scheme. Of the 48,000 rough lemon citrus seedlings sown in January 1966, 15,000 were transplanted to nursery plots in January 1967. The remaining 33,000 seedlings were transplanted in May-June, 1967.

49. One thousand two hundred (1,200) buds of Humlin orange and 300 buds of Valencia orange were brought from the Matuga Citrus Orchard of Mtwapa Research Station, Mombasa, Kenya. Some 5,500 Hamlin orange buds were received from Grand Island Nurseries, Florida, U.S.A. Six thousand five hundred (6,500) Washington orange buds were lost in transit but were replaced by 6,500 Valencia orange buds. In December, 1967, several thousand buds from well-developed budlings were prepared, and since 1966 the total budded root-stock is as follows:—

Table L—Citrus Root-stock Production

	<i>Root-stocks</i>
First Nursery Site ...	50,000
Second Nursery Site	33,000
TOTAL ...	83,000

50. The site originally selected for the citrus scheme in Teso was found unsuitable for commercial citrus growing, and it was necessary to select another site.

(h) Maize

51. Maize has always been an important local food crop, but production has not increased. Overseas export of milled and unmilled maize totalled 10,024 tons valued at £173,993 as compared to 36,445 tons valued at £736,220 exported overseas in 1966. Exports to Kenya and Tanzania of milled, unmilled, and germ maize meal amounted to 208 tons worth £3,658 as compared to 15,179 tons worth £270,086 exported in 1966.

(i) Minor crops

(1) *Vanilla*

52. The production of this crop has not increased appreciably despite a fairly high price. This is attributed to the high labour demand necessary to produce the crop.

(2) *Ginger*

53. The growing of this crop continued to be confined to Butambala and Mawokota counties of Mpigi division and is gradually gaining popularity.

(3) *Vegetables*

54. Mainly due to well-organized production and marketing of vegetables by an F.A.O. expert, vegetable production in Kigezi was very satisfactory. There was a 19 per cent increase in the number of growers from 1,630 to 1,947. The Kigezi District Vegetable Growers Co-operative Union Ltd. bought and sold 2,581 lb. of vegetables worth Shs. 270,750 to the growers. The principal markets were as follows:—

Table M—Principal Vegetable Markets For Kigezi Vegetables

Kampala		Masaka		Mbarara		Kabale	
lb.	%	lb.	%	lb.	%	lb.	%
2,245,398	86.7	146,185	5.6	89,669	3.8	100,319	3.9

Elsewhere, vegetable production also continued to expand very satisfactorily.

(4) *Cassava*

55. Owing to mechanical difficulties and shortage of water supplies, the Lira Cassava Factory scheduled to begin making starch by January, 1967, only came into operation in September, 1967. By the end of the year, approximately 30 tons of starch were produced and sold to Nyanza Textiles at a price of £60 per ton. The starch quality was reported to be extremely good but the price was higher than imported starch at £45 per ton.

(5) *Castor Seed*

56. This crop continued to be grown in Mubende and East Mengo, and some areas of Masaka. It is grown mainly on edges of plots, and efforts to increase production have not been very successful.

(6) *Groundnuts*

57. During the year under review, 449 tons were exported to Kenya and Tanzania worth £25,688. In addition, a total of 124 tons of groundnut oil valued at £15,110 were sold to the same countries. Overseas exports amounted to 1,193 tons worth £71,415.

(7) *Cereals*

58. Cereals production increased in most areas and was mainly used for local consumption.

V. AGRICULTURAL DEVELOPMENT AND EXTENSION WORK

(a) *Soil Conservation*

59. Emphasis on soil conservation remains one of the principal policies of the Department of Agriculture. Soil conservation campaigns were organised in all areas of the country, with limited success. Soil conservation measures demonstrated included strip cropping, discriminate grass burning, contour cultivations, ridging, mulching, paspalum bunding and three-yard grass strips.

(b) Progressive Farmers

60. Since the suspension of the Progressive Farmers Loan Scheme in June, 1964, there continued to be a decline in the number of progressive farmers in the country. Arising from a survey carried out by the U.S.A.I.D. Extension Specialist in 1966, a "community saturation project" was designed and tested on the ground in 1967. Basically, the scheme is designed "to popularise agricultural development and to stimulate interest among the majority of people in the community by placing the social pressure on the side of progressive farming". It was largely meant to impart new technological changes and improved practices in agriculture, thereby raising agricultural production and productivity. The response of the farmers to this project has been extremely encouraging.

61. The field staff continued to assist in the collection of loan repayments from farmers who had borrowed money under the Progressive Farmers Loan Scheme. Subsidies continued to be given to the deserving farmers.

(c) Co-operative Credit Scheme

62. In 1965, it was decided that in future, all agricultural credit would be channelled through (or in association with) the co-operative movement in Uganda, and linking the agricultural extension services with the provision of credit. Acting within the frameworks of the new policy, the Department of Agriculture re-organised its extension services in four pilot districts, namely, Bunyoro, Lango, Ankole and Bukedi, in which staff were assigned to work mainly with the co-operative societies under the co-operative credit scheme.

63. Proper training in the scheme was given to the staff. The first year of operation of the scheme has produced some commendable results, and in view of this, it will be spread to other districts.

(d) Animal Husbandry

64. The Department of Agriculture continued to advise farmers to adopt improved methods of animal husbandry and animal production. Emphasis was placed on rotational grazing, fencing, controlled grass burning, the application of manures, and the acquisition of better quality stock. The response has been very satisfactory, especially in Buganda and in Western Region.

Table N—Dairy Production in the Western Region

District			No. of Farms		Head of Cattle		Total No. of Exotic Cattle	
			1966	1967	1966	1967	1966	1967
Ankole	..	..	17	18	398	244	2,290	2,590
Toro	..	..	23	28	560	656	561	656
Bunyoro	..	..	18	38	278	733	278	733
Kigezi	..	..	N.R.	N.R.	44	45	44	44
TOTAL ..			58	84	1,280	1,678	3,173	4,024

65. In addition, there were eleven dairy co-operative societies in Ankole, three dairy and four ranching co-operative societies in Bunyoro, two dairy co-operative societies in Kigezi, and four dairy co-operative societies in Toro.

66. A number of farmers continued to show interest in poultry keeping. Improved stock of pigs and goats were kept at Government Farms for experimental and teaching purposes. Many courses on livestock production were held in District Farm Institutes.

67. The usual seasonal shortage of grazing was experienced during the year. Improved pasture seeds were bought and many farmers are beginning to appreciate the benefit of improved pasture.

(e) Irrigation and Swamp Reclamation

(1) WESTERN REGION

68. The irrigation project started at Mubuku/Sebwe Rwero in 1964 with the assistance of the United Nations Development Programme (Special Funds) through the Food and Agriculture Organisation, and the Government of Uganda, continued to be developed by the Toro Development Company, a subsidiary of the Uganda Development Corporation. The development programme comprised of approximately 20,000 acres, of which 12,800 acres were designed for intensive irrigation, 1,100 acres for supplementary pasture and an additional 500 acres to be developed by use of lift irrigation. Since 1966/67, the new cotton strain, BPA. 66, has been multiplied in the project area, and the yield averaged 1,600 lb. per acre.

69. In Kigezi and Ankole Districts, reclaimed land from swamps continued to be utilized and maintained. Various crops such as sweet potatoes, sorghum and vegetables were grown mainly during the main dry seasons of December to February and July to August.

(2) EASTERN REGION

(i) Labori Irrigation Scheme—Teso District

70. An area of 396 acres was cleared, surveyed, laid out and mapped by the Bush-clearing and Land Planning Unit of the Special Development Section.

(ii) Küge Citrus Development Scheme

71. A total of 904 acres was cleared and surveyed for the citrus scheme. A topographical map was produced by the Water Development Department. The map showed the pumping line from the deep water source of Lake Nabigaga. The map will be given to the Irrigation Equipment Suppliers who will prepare their own map from which they will work out their estimates for irrigation equipment.

(iii) Kasolwe Citrus Nursery

72. The citrus seedlings at this nursery were irrigated throughout the year with water from a dam, using an overhead irrigation system.

(3) NORTHERN REGION

(i) *Agoro Irrigation Scheme—Acholi District*

73. An Assistant Agricultural Officer was assigned to initiate the development of this irrigation project.

(ii) *Ongom Citrus Scheme—Lango District*

74. The original citrus scheme site was moved from the western bank of the Ongom Dam to between the Ongom and Owmeri dams where it was hoped sufficient water for irrigation would be available. An area of approximately 550 acres were surveyed and marked in preparation for bush-clearing operations.

(f) **Resettlement Scheme**

75. In Nyakashashara, Ankole, a total of 309 acres were established under tea by the end of the year. A total of 262,109 lb. of green leaf was sold to the Ankole Tea Factory. In Oruchinga Valley, crops grew well as weather conditions remained fairly favourable during the year. The 8,098 refugees around Lake Nakivale area had adequate grazing and water for their cattle.

76. Settlement schemes in Toro and Bunyoro Districts made satisfactory progress. Approximately 2,000 refugees were settled at Ibuga within the area earmarked for Rugendabara Co-operative Farming Society.

77. The influx of refugees from the Sudan and the Congo continued in Madi and Acholi Districts, and they were being settled in Agago and Acholpii in Acholi District and Origo in Madi. Commendable progress was made, and in Madi the refugees were reported to be producing more food than the local people.

(g) **Ox-cultivation**

78. Ox-cultivation continued to be encouraged along policies laid down in previous years. Improved methods of handling oxen, especially the Indian system, were encouraged, and staff assisted farmers in training their oxen to this system.

VI. AGRICULTURAL EDUCATION

(a) **Agricultural Colleges**

(i) *Bukalasa Agricultural College*

79. The year 1967 was a successful but rather difficult one. The College continued to conduct the three-year Diploma course in General Agriculture. Efforts were concentrated on consolidating and improving the syllabus. The large number of students, especially in the second year, made the provision of adequate individual practical training rather difficult.

80. The student population rose to 190, and with the Co-operative College students included, the total student population was 317. The final year students consisted of 48 students, of whom 5 were girls. Forty-five students, including the 5 girls, were successful in the final examinations and were awarded the College

Diploma in Agriculture. One student obtained a First Class pass, while 23 obtained Second Class and 22 obtained Third Class passes in the final assessment of performance. Thirty-one students were selected for the East African Diploma in Agriculture examination, of whom 23 were successful.

81. All the 88 second year students attended a three-weeks' tractor operator course at Namalere during the long vacation.

82. The syllabus for Home Economics for the 15 girls was implemented. All girls had the opportunity of carrying out field practical demonstrations in Horticulture and Home Economics for the local women's clubs.

83. Due to lack of accommodation, only 52 students were admitted in the first year. Although Egerton in Kenya and Morogoro in Tanzania started providing diploma courses in agriculture, applications from these countries continued to be received, especially from girls who are interested in the Agriculture/Home Economics courses.

(ii) Arapai Agricultural College

84. For the second year, College Diplomas in Agriculture were awarded at Arapai. Out of eighty students who sat for the examination, seventy-six qualified at the first attempt. Thirty-five of these students sat for the East African Diploma in Agriculture and of these, twenty-nine qualified for the award.

85. The necessary teaching and accommodation facilities did not keep pace with the increase in the student population. In large classes, it was not always possible to give the necessary individual attention to each student. With a total enrolment of 219 students during the year, the problem of overcrowding continued. However, during the year, the construction of U.S.A.I.D. quonset huts was completed and this alleviated the accommodation problems. There were 44 students in the first year, 94 in the second year and 81 in the final year.

(b) District Farm Institutes

Courses were held at all District Farm Institutes throughout the country. The courses included:—

- (a) General Agriculture.
- (b) Animal Husbandry.
- (c) Ox-cultivation.
- (d) Specialised Courses.
- (e) Staff Refresher Courses.
- (f) Community Development Courses.
- (g) Co-operative Courses.
- (h) Traders Courses.
- (i) Tea Outgrowers Courses.
- (j) Young Farmers of Uganda Courses.

As can be seen from Table O, a large number of people attended these courses.

Table O—Numbers of Students attending District Farm Institute Courses

<i>Region</i>				<i>No. of Students</i>
Buganda	...	...	...	2,642
Western	...	...	...	2,447
Eastern	...	...	...	5,394
Northern	...	...	...	2,149
TOTAL				12,632

(c) Farm Schools

86. Aler Farm School, run by Lango District Administration, continued to experience financial difficulties. The District Administration, after some consideration, decided to establish a dairy herd to avoid allowing the farm to revert to bush. No intake of students was undertaken during the year.

87. At Gulu Farm School, 124 students were enrolled, of whom 99 were boys and 25 girls.

88. In Amucu Farm School in Teso District, there was a total of 112 students, of whom 42 were in their second year. The Young Farmers Programme was very popular in this school and a total of 105 members was enrolled. Projects carried out by members included vegetables, cotton, maize, beans and keeping rabbits. Pigs and exotic cattle were also introduced in the school.

89. The Muljibhai Madhvani Farm School, Wairaka, in Busoga, continued with the running of courses in general agriculture for boys and girls. The final year students sat for the City and Guilds of London Examinations in crop and Animal Husbandry.

VII. MECHANICAL CULTIVATION

(1) General

90. During 1967, the 222 new tractors delivered to the Regions in the previous year became fully operational. Two hundred and fifty (250) new Deutz were also delivered to the Regions in 1967, but were not used as demand did not justify their use this year.

91. Attempts were made to re-group tractors by makes in each Region to simplify purchase of spares and repairs.

92. The acreage cultivated by tractors in 1967 was not as high as expected; the main reasons for this are as follows:—

(a) Most group farms had defaulted a loan repayment. No new loans were granted to these farmers, and 10,000 acres of work were lost in Lango alone because of this.

(b) As in past years, loans were granted too late in the season for farmers to utilize.

(c) The price paid for cotton dropped from 60 cents to 40 cents per lb.

(d) It is thought that because of low profit margins, farmers use tractors mainly for opening first-year land.

93. In 1967, the regionalization plan, aimed at de-centralization, was put into effect towards the end of the year. It is hoped that this will help to streamline organisation in the field and rationalize the use of labour and machinery.

94. It was felt that the tractor force consisted of too many makes and types of tractors, and that concentration on 1 or 2 makes of over 50 H.P. would go a long way to resolving many of the problems that affect the Tractor Hire Services in the field.

95. Central purchasing of spares by Namalere was started, and it was hoped that a better service could be given to the Regions than was the case in the past.

96. The main problem facing the Tractor Hire Services has once again been the seasonal nature of the work. Greater effort must be made to obtain off-season work.

(2) Tractor Hire Services

97. The acreage output by tractors in 1967 was 93,624 acres in comparison with 103,756 acres in 1966. The main reason for this drop was the failure of group farm members to repay their loans, resulting in a lower acreage being cultivated on these farms. The acreage cultivated in Lango group farms fell by 10,000 acres. This was largely responsible for a drop from 34,207 acres cultivated in 1966 to 22,434 acres in 1967 in the Northern Region.

98. In spite of a drop of 3,000 acres in Teso group farm acreage, Eastern Region cultivated 33,378 acres in 1967 in comparison with 34,390 in 1966. Buganda Region cultivated 14,369 acres in 1967 as compared with 14,678 acres in 1966. Western Region only showed an increase in acreage from 20,481 acres in 1966 to 23,443 acres in 1967. The opening of Rugendabara Group Farm, where 3,000 acres were cultivated, was mainly responsible for this increased acreage.

Table P—Acreage worked by Special Development Section Tractors on a Revenue-earning Hour Basis (not including Departmental work)

Region	1962		1963		1964		1965		1966		1967	
	<i>Acres</i>	<i>per cent</i>	<i>Acres</i>	<i>per cent</i>	<i>Acres</i>	<i>per cent</i>	<i>Acres</i>	<i>per cent</i>	<i>Acres</i>	<i>per cent</i>	<i>Acres</i>	<i>per cent</i>
Northern	2,694	42.0	4,298	39.2	11,000	31.9	25,680	31.7	34,207	33.0	22,434	24
Eastern ..	808	12.5	1,028	9.4	10,243	29.7	26,647	32.9	34,390	33.1	33,378	357
Western	1,096	17.1	1,487	13.6	5,210	15.1	15,217	18.8	20,481	19.8	23,443	250
Buganda	1,823	28.4	4,132	37.8	8,013	23.3	13,447	16.6	14,678	14.1	14,369	153
UGANDA TOTAL ..	6,421	100	10,945	100	34,466	100	80,983	100	103,756	100	93,624	100

Table Q—Average hours necessary to cultivate 1 acre with S.D.S. Tractors, 1967

Region			1st Plough	2nd Plough	Discing	Slashing	Rota- vating	Planting
			<i>hrs.</i>	<i>hrs.</i>	<i>hrs.</i>	<i>hrs.</i>	<i>hrs.</i>	<i>hrs.</i>
Northern	..	..	1.65	1.58	1.00	1.00	3.2	0.70
Eastern	..	..	1.83	1.70	0.92	1.03	2.4	0.57
Western	..	..	1.75	1.35	0.83	1.29	2.34	0.98
Buganda	..	..	2.23	2.05	1.24	1.42	3.32	0.65
UGANDA ..			1.83	1.68	0.94	1.24	2.85	0.76

Table R—Average number of S.D.S. Tractors in each Region over the last 6 years

Region			1962		1963		1964		1965		1966		1967	
			Trac- tors	Per cent	Trac- tors	Per cent	Trac- tors	Per cent	Trac- tors	Per cent	Trac- tors	Per cent	Trac- tors	Per cent
Northern	..	..	13	37.2	16	36.4	69	28.2	88	25.8	129	26.4	188	28.9
Eastern	..	..	6	17.1	7	15.9	77	31.4	119	34.9	168	34.4	239	35.7
Western	..	..	6	17.1	9	20.4	46	18.8	65	19.1	90	18.4	115	17.6
Buganda	..	..	10	28.6	12	27.3	53	21.6	69	20.2	102	20.8	109	16.8
UGANDA ..			35	100	44	100	245	100	341	100	489	100	651	100

Table S—*Actual Revenue Earned by S.D.S. Tractors, 1966-1967

Region	1966		1967	
	<i>Shs.</i>	%	<i>Shs.</i>	%
Northern	1,122,249	30.7	937,931	24.8
Eastern ..	1,273,081	34.8	1,406,324	37.2
Western ..	651,549	17.8	820,698	21.8
Buganda ..	611,253	16.7	612,347	16.2
UGANDA	658,132	100	3,777,300	100

*Actual revenue does not include departmental work.

Table T—Total Cost/Total Revenue/Total Subsidy/S.D.S., 1967

Region	Total Cost (<i>Shs.</i>)	*Total Revenue (<i>Shs.</i>)		Subsidy as a:—	
				Percentage of Total Subsidy	Percentage of Total Cost
Northern ..	2,866,364	941,606	1,874,758	29.8	66.6
Eastern ..	3,104,854	1,430,021	1,674,833	26.6	53.9
Western ..	2,157,698	835,799	1,321,899	21.0	61.3
Buganda ..	2,040,216	618,686	1,421,530	22.6	69.7
UGANDA ..	10,119,132	3,826,112	6,293,020	100	62.2

*Includes departmental. In 1967, departmental work was standardised on work for which an acreage had been indicated. All other operations were entered as operational work. Theoretical revenue, therefore, is much smaller in 1967 than in past years.

(3) Group Farms

99. In 1966, forty-three group farms were in operation. Due, however, to non-payment of loans, only thirty of them were producing crops in 1967, the more successful farms being in Bunyoro and Lango. Total group farm membership was 1,841 as against 3,575 in 1966.

100. The average acreage cultivated per farmer on group farms was 5.1 acres per annum. Cotton accounts for 30 per cent of crops on group farms, and millet 22 per cent, wheat being the main crop at Suam and Bukwa on the slopes of Mount Elgon.

Table U—Group Farm Participants, 1964–1967

Region	1964	1965	1966	1967
Northern ..	323	1,241	1,613	598
Eastern ..	473	1,241	1,453	820
Western ..	299	395	438	398
Buganda ..	163	119	71	25
TOTAL UGANDA ..	1,258	2,996	3,575	1,841

Table V—Total Acreage of Crops Grown by Group Farms, 1967

<i>Crop</i>				<i>Acres</i>
Cotton ...	...	...	...	3,404
Millet ...	...	...	...	2,085
Wheat ...	...	...	...	1,047
Groundnuts ...	...	...	...	799
Maize ...	...	...	...	730
Sorghum ...	...	...	...	417
Beans ...	...	...	...	176
Cassava ...	...	...	...	161
Miscellaneous ...	...	...	...	361
TOTAL ...				9,180

(4) Bush-clearing

101. The section continued to operate three Heavy Bush-clearing Units, a Light Bush-clearing Unit, and a Road Construction and Soil Conservation Unit.

102. One of the heavy units is working on ranching schemes in Ankole, the operating cost being met by the Veterinary Department. The second Heavy Bush-clearing Unit is working on the Tsetse Consolidation line in Bunyoro for the Tsetse Control Division of the Veterinary Department. The third unit cleared land on Rugendabara Group Farm, and additional clearing was carried out on Kihonda and Kisindi in Bunyoro, and Aboke Group Farm in Lango. Work was also carried out on irrigation schemes in Kiige, Busoga, and Labori in Teso.

103. The Light Bush-clearing Unit worked at various schemes throughout the country, but the Caterpillar D4 tractors proved too light for bush clearing

and their use would be better if limited to light earth moving, ploughing and trace cutting.

104. The Road Construction and Soil Conservation Unit carried out soil conservation work at Bukwa, and then moved to north Acholi and was engaged in building the road from Paloga to Lotuturu. By the end of the year, 22 miles of road had been completed. Road-making equipment sufficient for a further two teams arrived during the year.

VIII. INVESTIGATIONS

(a) General

(1) *Serere Farm*

105. In general, the weather was favourable, the rains breaking in late March, ending a very severe dry season. A dry spell in late May did not seriously affect cotton. Heavy rains fell in October and November, but because cotton had been planted early, they did not adversely affect yield or quality.

106. *Cotton*.—The mean yield of cotton obtained was 1,195.7 lb./acre over approximately 55 acres, one 4-acre field of Satu 68 yielding 1,463 lb. per acre. Stained cotton averaged 6.9 per cent.

107. *Groundnuts*.—Yields were, on average, lower than for some years. The best yields recorded were 1,500 lb./acre in shell. Only 16 acres of main farm crop were sown owing to the cost involved in harvesting.

108. *Sorghum*.—The mean yield in the first rains was 2,511 lb./acre. A very severe stalk borer attack damaged all unsprayed areas and reduced yields considerably in the second rains.

109. *Finger Millet and Beans*.—These were grown in small experimental areas, and yields were generally low.

110. Some 75 acres of permanent pasture were lost to fire in January, and 114 acres of rough permanent pasture were ploughed and re-seeded.

111. The farm continued to produce high quality seeds for farmers. Demand exceeded supply, particularly for groundnut seed. In future, all seeds multiplication will be the responsibility of the seeds division of the Department. Serere, from July 1968, will only supply the basic seeds for the multiplication scheme.

Table W—Comparable Seed Distribution figures for the past 4 years

Crop Variety	1964	1965	1966	1967
	<i>lb.</i>	<i>lb.</i>	<i>lb.</i>	<i>lb.</i>
Maize White Star ..	—	—	8,730	16,570
Finger Millet Engenyi ..	400	2,040	4,640	19,306
Sorghum Serena ..	11,926	11,482	24,604	31,820
Sorghum HX57 ..	—	—	1,805	40
Sorghum HX301 ..	—	—	1,165	425
Bullrush Millet ..	10,676	1,606	5,490	Not grown
Groundnuts:				
Red Beauty ..	—	—	25,875	32,810
Bukene ..	4,760	29,350	2,400	14,800
Manipintar ..	—	—	1,750	160
Bean variety 35 ..	1,179	5,991	115	Not grown
TOTAL ..	32,066	63,345	77,074	115,871

112. Extensive replanting of the ginnery orchard was undertaken to replace trees damaged in the 1967 fires. The Ghost house orchard was uprooted as most of the trees were old and diseased. An area was cleared to receive improved citrus varieties from the citrus scheme, and a trial will be carried out under irrigated conditions.

113. There was some recovery in the lusuku which was also damaged in the 1967 fires. As suckers become available, a new variety trial of the more promising varieties will be laid down. Pawpaws and pineapples have been planted in the lusuku and orchard area.

114. The tractor force was increased by 1 and now totals 9 tractors. They averaged 745 engine-hours each during the year.

115. During the year, 5 miles of farm roads were regraded. Existing drains were cleared and repaired and the fencing gang was fully occupied repairing fences damaged by fires.

(2) Kawanda Farm

116. The year's total rainfall was a little above average, but its distribution was not very satisfactory. August was dry and 4 acres of early planted second rains maize had to be ploughed in and replanted.

117. Red Beauty groundnuts averaged 782 lb. of unshelled nuts in the first rains. One field in its third cropping year gave a yield of 1,189 lb. of unshelled nuts. This higher yield was thought to be partly due to a higher seeding rate of 138 lb. per acre, in comparison with just under 100 lb./acre for other fields.

118. Western Queen Maize (M.H. 59) outyielded White Star (R.R.M./5354) giving 4,200 lb./acre, compared with 1,300 lb./acre. White Star was, however, grown on the poorer land. White Star maize grown in the second rains was sown late due to weather conditions, and the best recorded yield was 1,800 lb./acre.

119. Banja beans grew well in the first rains and gave yields of 1,000 lb./acre. Mutike 4 beans gave poor yields. Both Banja and No. 35 gave poor yields in the second rains.

120. The Kawanda herd produced 45,000 gallons of milk. The herd averaged 15½ lb. milk per day, the Friesians averaging 26½ lb. per day. The nucleus of the old Namalere herd and one bull were transferred to Serere in August.

121. In spite of regular vaccination, 9 abortions were recorded during the year. This continues to be a worrying factor and affects the efficiency of the herd.

122. The "twin" experiment was terminated at the end of the year, and the twin cattle amalgamated with the rest of the herd.

(b) Soil and Plant Chemistry—General

At Kawanda, several of the 25 factorial permanent manurial experiments reached the end of their 2nd 4-year cycle, but some of these were continued

throughout the year to test further the effects of lime and trace element treatments, which had been introduced during the latter half of the 2nd cycle. Broadly, the principal conclusions drawn from this series of trials can be summarised as follows:—

(i) Responses to nitrogen and phosphate in the 2nd cycle were very similar to those in the first cycle.

(ii) Responses to potash tended to become more pronounced with each successive crop and were well marked in the second half of the 2nd cycle.

(iii) There was no response to magnesium at any centre.

(iv) Farm-yard manure generally gave responses at those centres where phosphate and potash were effective.

(v) Trace element treatments gave no response, but positive interaction with lime occurred in two legume crops.

123. An experiment to test the effects of nitrogen, phosphate and potash in combination with a legume (*Desmodium intortum*) on the yields and quality of elephant grass was laid down in the second rains of 1967.

124. Trials were conducted at various sites in the Northern Region to assess the response of tobacco to fertilizer application.

125. In an attempt to identify some of the causes of low maize yields at Kawanda, a variety/manure/spacing trial was started in the first season at Kawanda. The results can be summarised as follows:—

(a) *Variety*. Overall yields of the two varieties tested were 6,655 lb. grain/acre for the Kenya hybrid H632 and 4,350 lb./acre for White Star.

(b) *Manure*. Significant responses were obtained to farm yard manure, but not to nitrogen fertilizers. (Calcium ammonium nitrate) phosphate and potash had been applied in a blanket treatment.

(c) *Spacing* 3' × 1' gave a significantly better yield than the 3' × ½' spacing (10 per cent increase).

126. The trial was continued in the second season but had to be abandoned because of storm damage.

127. Irrigation/fertilizer experiments were continued on cotton at Kakira, Busoga and Mubuku, Toro. At Kakira, results were inconclusive, yields were lower than 1966, and there were no significant differences between treatments or times of planting. There was a marked response to irrigation at Mubuku because of a dry spell in the early months of the cotton season, the irrigated cotton yielding 1,860 lb. seed cotton per acre, while rain-grown cotton gave only 514 lb. seed cotton per acre. There was no significant response to fertilizers.

128. The progress of the fertilizer extension scheme to the end of 1967 is shown in Table X.

Table X—Number of Trial Sites

Crop/ Year	Cotton	Ground- nuts	Maize	Finger Millet	Wh e:	Total
1963 ..	122	—	—	—	—	122
1964 ..	168	78	14	51	—	311
1965 ..	737	96	31	94	23	981
1966 ..	973	403	174	236	21	1,807
1967 ..	604	209	115	105	25	1,058
TOTAL	2,604	786	334	486	69	4,279

129. Several sites completed their 3rd successive year of operation and modified trials were started to compare effects of management on fertilizers responses. Results are summarised in the Table below.

Table Y—Range of Yield Increases

	Range of Yield increase due to management alone	Range of fertiliser response increase due to improved management
	<i>Per cent</i>	<i>Per cent</i>
<i>Cotton:</i>		
Northern Region ..	10—60	30—70
Eastern Region ..	15—120	36—250
<i>Groundnuts:</i>		
All centres ..	25—160	20—30
<i>Maize:</i>		
All centres ..	30—75	20—100

130. Economic responses to fertilizer were achieved in many centres, particularly in soils of lower fertility in the Northern and Eastern Regions. In Buganda and Busoga, responses were variable and frequently un-economic.

131. Serere reported large responses to manure and inorganic fertilizers from field experiments at Serere and district centres. Consistent responses to phosphate applications were obtained. The effects of nitrogen application were generally enhanced by a balancing application of phosphate, particularly in the case of cotton.

132. The long-term experiments on crop rotation have continued to give valuable information on the response of individual crops to inorganic fertilizers, manure and liming, as well as the different systems of cultivation. The fertility trials gave interesting results on the effects of long-term cropping. The control plots have been under cultivation for 30 years, never more than 1 year in 5 resting and have had no fertilizer or manure. The increased yield obtained with good management is clearly demonstrated in Table Z below.

Table Z—Fertility Trial Yields in lb./acre, 1967

Series No.	1		2	3	4	5	
	Finger Millet	Bulrush Millet	Cotton	Cassava	Cotton	Ground- nuts	Sorghum
Control	442	255	280	6,015	531	860	520
Maximum Yield	2,142	1,380	879	8,940	837	1,770	2,544
Average Yield	458	710	458	5,373	521	1,018	1,364

133. Similar results were obtained from the permanent manurial trial where control plots yielded 2,924 lb./acre sorghum compared with 7,361 lb./acre from a plot receiving 20 tons of manure once in 3 years and nitrogen and phosphate fertilizer application, but no resting period.

(c) Chemical analysis

134. Routine analysis of herbage samples from trials to assess their nutritive value to livestock, and analysis of soil samples, continued.

(d) General Entomology

135. Further trials in which the effects on yield and the insectmite populations, of increasing the number of sprays of a variety of insecticides were carried out at Serere. Yields of seed cotton from the standard four sprays applied in most trials was in the range 1,000 to 1,200 lb. per acre. Increasing the number of sprays to twelve resulted in extra yields of 400 to 450 lb. per acre.

136. Several new insecticides were screened for effectiveness against the cotton pest complex; these included C1414, C9491, C8874, Nexagan and Cidal. None of them showed particular promise, but one or two will be tried at higher rates of application.

137. A range of aphicides were tested in screening and field trials for control of the vector of rosette disease. Very satisfactory results were obtained with Dimethoate, Phosphamidon and Endosulfan. Trial plots on which Menazon was applied at half the recommended rate again gave good results. In screening trials, Dierotophos, Anthio and Cidal 50 gave satisfactory preliminary indications. Yield increases ranging from 400 to 500 lb. were obtained over the control yield of 1,900 lb. dry groundnuts in shell.

138. Cigar End Rot was reported in bananas in parts of Buganda and Eastern Regions.

139. A survey of the prevalence of Tobacco Root-knot disease was carried out in Bunyoro. Heavy infestation was found to occur when continuous cropping of tobacco was practised on the same land.

139A. The East African Agriculture and Forestry Research Organisation and the United States A.I.D. Cereal Unit's entomological work was mainly concerned with the sorghum shoot fly and lepidopterous stalk borers attacking sorghum and maize in East Africa. Ecology, insecticidal control and plant resistance are the chief areas of research.

(e) Crop Investigation and Research—Annual Crops

(1) *Maize and other cereals*

140. At preliminary variety trials at Kawanda, Bukalasa and District variety trials, the two Kenya hybrids, H622 and H632 outyielded White Star and Western Queen. At Bukalasa, the two hybrids yielded well over 6,000 lb./acre. Growing conditions were better in the first season. The trials conducted at

Kawanda, Bukalasa and Namulonge were fertilized with single superphosphate and calcium ammonium nitrate at rates of 2 to 3 cwt per acre. During the second season, the incidence of "streak" was wide-spread and high.

141. The East African Agriculture and Forestry Research Organisation (EAAFRO) Sorghum Breeding Unit based at Serere reported that the main object of the sorghum breeding work continued to be the development of high yielding varieties and hybrids.

142. New variety selections, together with Serena and Dobbs as controls, were tested at variety trial centres throughout Uganda during the first and second rains. Unfortunately, most trials in Teso failed as a result of a heavy stalk borer attack. None of the new selections showed yielding potential greater than Serena and Dobbs.

143. New hybrids were similarly tested against the standard HX57 and HX301 hybrids. Again none of the newcomers proved to be better than the two standard hybrids. The factor limiting the breeding of hybrids is their excessive height, which results in considerable lodging. Work to correct high defects is in progress.

144. The United States A.I.D. Cereal Unit at Serere has been concentrating on millet breeding. Local finger millet types and accessions from the world collection have been evaluated in preliminary trials. Breeding for resistance to "blast" in finger millet has been started.

145. The breeding programme on Bulrush Millet is directed towards the use of either improved composites or inter-composite hybrids. Hybrids are also feasible by the use of cytoplasmic sterility and some are currently being evaluated. The local and world collection types are being classified as sterile maintainers or fertility restorer types, and from these sources, two composites will be developed to initiate the recurrent selections scheme.

146. Agronomy trials were conducted at both variety trial centres and on farmers' fields.

147. The effects of nitrogen and phosphate on improved varieties of sorghum and Finger Millet yields were studied in Kumi and Ngora counties in Teso. Yields were increased substantially when nitrogen and phosphate were applied in combination. The economics of applying fertilizer were not worked out, but it appears that the optimum levels lie between 120 lb. to 250 lb. per acre of both calcium ammonium nitrate and single superphosphate fertilizer.

148. Soil analysis of samples showed very low amounts of soluble phosphate in farmers' fields in both counties and confirmed the responses obtained with phosphate fertilizer in previous trials.

149. All rice samples sent to the Commonwealth Bureau of Helminthology were found to be free from the white tip nematode.

150. Nine new rice varieties from Zanzibar were processed and released by Muguga Quarantine Station. These were added to the collection.

151. A new variety of wheat, "Florence Aurore", from the Republic of Niger, was planted at Kawanda and showed some promise.

(2) *Beans*

152. A number of selections from the 1964 double crosses and Panmixia showed promise under field conditions.

(3) *Groundnuts*

153. The main emphasis of work in the selection continued to be varietal testing at Serere, with introduction of promising selections into variety trials throughout Uganda.

154. Sowing of the main rain groundnut crop was delayed by difficulties experienced in land preparation. Plant population on the six Serere trials was good, although there was a high incidence of thrip damage to young leaves. Of the 49 cultivars sown in the spreading variety trial, six yielded over 2,000 lb. per acre with variety 292, yielding a total of 2,923 lb./acre. Twenty-five cultivars have been selected for further testing.

155. Ten cultivars in the Bunch Variety trial outyielded B1 Red Beauty and will be studied further. The Crosses AT9 and AT19 were included in this trial and are intended to produce a short-term brown-skinned variety for Eastern Region; they yielded well.

156. Selection among progeny rows for rosette resistance was continued.

157. Results from district trials in Eastern Region were most encouraging from all trials where Menazon was used.

158. In the Valencia trials, Roxo 531, Tatu 386 and B15 all outyielded the standard B1 (Red Beauty). In the Spanish trials, Bukene was outyielded by 710,534 and 347; in the spreaders, Mount Makulu Red 258 and 418 outyielded the Manipintar standard.

(4) *Cotton*

159. SATU was grown throughout the "S" area with the exception of Mbale Zone in which B.C. 177 was grown for a limited trade requirement.

160. The programme of reselection with SATU continued and eight promising strains were selected for testing in district variety trials. The average yield of these selections was 17 per cent higher than SATU 65 controls. The lint was mature with an average micronaire value of 4.1, the same as SATU 65. Fibre strength was 7 per cent higher and yarn spun from it was 9 per cent stronger than that of SATU 65. Lint samples from progenies and strains were sent to the Namulonge Fibre Testing Laboratory and to the Shirley Institute for fibre and spinning tests. Great emphasis was placed on selection of progenies and strains with high fibre strength and maturity combined with an acceptable micronaire (4.0 to 4.2).

161. Routine screening of all the breeding material for resistance to bacterial blight continued. It appears that at Serere, the stem inoculation technique can only be profitably used for identifying plants of medium to low resistance. With

increasing resistance to bacterial blight, it becomes difficult to identify differences between plants. Boll inoculation was found to give better results and this technique alone will be used in future.

162. Performance of the Albar X Acala hybrid material was disappointing. Work on this material will be given lower priority next season. A series of selection plots were grown in which miscellaneous material and newly introduced varieties were evaluated. Crosses were made between SATU and the most promising introductions.

(5) *Agronomy (Annual Crops)*

163. District sowing trials were carried out at 19 sites in Northern and Eastern Regions. These trials demonstrated an average loss of 43 per cent in cotton yield when sowing was delayed by one month after the optimum date. This result was somewhat unexpected since the late rains were said to have favoured late sowings.

164. The effects of population density, sowing date and fertilizers on yield were also investigated. Establishment was poor, but at the officially recommended spacing, 2 cwt per acre of ammonium sulphate increased cotton yield from 1,454 to 1,783 lb./acre (18 per cent) while at half this population density, yield increased from 1,550 to only 1,602 lb./acre (under 3 per cent). Under this experiment, there was no marked sowing date X population density interaction.

165. Several herbicides were screened and one C6989 was found most promising. With hand-sown cotton, several herbicide-treated plots yielded 15 to 18 per cent more seed cotton than the hand-weeded plots and reduced weeding cost by 30 per cent.

166. Twelve herbicide products were screened for use on groundnuts, using a Minilog sprayer. All were applied as pre-emergent sprays and several appeared as good as or better than the recommended Patoran treatment. Promising entries will be field-tested. Herbicides were also screened for use in Sesamum in both the first and second rains.

167. Further work on fertilizer application to groundnuts showed no interaction between fertilizer application on the ridge and flat. Ridging did not increase yield but 26"-rows gave superior yields to 36". On Sesamum application of nitrogen, yields increased by up to 34 per cent, while application of phosphate gave a further 12 per cent increase.

168. Work on spacing and harvesting of Sesamum was initiated. There were indications that yields from a 13"-spacing were superior to 26"-spacing and that the intra-row spacing should be 6" to 9".

169. Four methods of drying were used in the harvesting trial—conical stooks, "head down" on rack, "head up" on rack and stacked flat. Conical stooks proved to be a very satisfactory method, only 2.7 per cent yield loss being recorded compared with 47 per cent on the "head down" method. Damage due to moulds was encountered in the Sesamum stacked flat, while an 18-per cent loss was recorded using the "head up" method. Considerable labour saving would be obtained using the stooking method.

(6) *Sugar-Cane*

170. The East African Sugar-Cane Breeder was appointed in late 1966. Sugar-Cane seed was produced in 1967 and was distributed to the three East African countries.

171. The second East African Specialist Committee on Sugar-Cane Research, meeting at Muguga, recommended that Kibaha, near Dar-es-Salaam, be the first choice site for the East African Sugar-Cane Breeding Station, and Kawanda recommended as the East African Sugar-Cane Disease Testing Station. Following this decision, the Sugar-Cane Open Quarantine and the National Variety Testing Programme were moved from Kawanda to Bukalasa Experimental Farm and Kituza, respectively. During the year, 25 sugar-cane varieties were released to the sugar estates from open quarantine at Kawanda.

(f) *Perennial Crops*

(1) *COFFEE (ARABICA AND ROBUSTA)*

(a) *Breeding*

172. A plant breeder provided under the French Aid Scheme assumed duty in October, 1967, and plans were formulated for the resumption and expansion of the coffee breeding programme.

173. The Robusta coffee progeny trials (1965) and trial to test the adaptation of selected Kawanda mother trees continued.

174. Preliminary plans were made for the assessment of Robusta poly-crosses and hybrids with the object of finding high yielding material.

175. The two Lyamungu Arabica hybrid trials at Ibanda and Bugusege, which form part of the East African Arabica coffee Breeding Programme, were continued.

176. Arabica trials of the Kawanda hybrids, the district sorting and intermediate trials and variety trials were all continued. All varieties proved susceptible to *Hemileia* leaf rust.

(b) *Entomology*

177. Fenitrothion 50 per cent miscible liquid at $\frac{3}{4}$ pint per acre has continued to give good kills of *Antestia* (*Antestiopsis* Spp.) on Arabica coffee. Up to three sprays in the season do not seem to be much better than a single spray in controlling the pest, although there may be some yield increases from multiple sprays.

178. Sampling was continued for Lacebug, *Habrochila ghesquierei* and Coffee Berry Borer *Hypothenemus hampei* to see if there is a relationship between climate and cropping infestation.

179. A survey was made of the wild host plants of the white stem-borer *Bixadus sierricola*. The preferred host appeared to be *Tarenna pavettoides* although this plant is not common, but the stem-borer was also found on *Vangueria apiculata* and *Oxyanthus speciosus*. These wild plants like coffee belonging to the family *Rubiaceae*.

(c) Pathology

180. Field spraying trials for the control of Coffee Berry Disease (C.B.D.) were continued in Kigezi and Sebei, using smaller quantities of copper fungicide per acre. Previous work had indicated that if the spray is properly and carefully applied, it may be possible to reduce the amount applied below that currently recommended (*i.e.* $7\frac{1}{2}$ lb. of a 50 per cent copper fungicide in 40 gallons of water). Results showed a degree of control from applications as low as $2\frac{1}{2}$ lb. Perenox per spray per acre. The trials are to be continued in 1968.

181. Other trials failed to confirm any advantage in using Tuzet for the control of C.B.D. and work with this fungicide will be discontinued.

182. The rust spray/fertilizer trials on Arabica coffee in Bugisu continued to show the benefit of copper spraying to control Leaf Rust, in combination with nitrogen fertilizers.

(d) Agronomy

183. Four Arabica observation plots in Masaka division were planted with seedlings from Kawanda to assess the performance of Arabica at this low altitude.

184. A survey and assessment was made of the possibility of growing Arabica coffee as a major crop in the proposed Aringa Valley Settlement Scheme in North Acholi. This area is situated in the Agoro mountains. Little is known of the climate, but if rainfall is adequate, the conditions are reasonably favourable for growing Arabica coffee. A nursery was established on the site for the raising of seedlings to plant one acre observation/variety/fertilizer trials at representative points within the area. The seedlings are doing well and will be transplanted to the field in 1968.

185. Seed plots of SL.14 and SL.28 continue to supply the majority of seed for the planting of departmental Arabica nurseries throughout the country.

(2) COCOA

(a) General

186. Owing to lack of funds, there was no expansion in the field during the year under the cocoa development scheme. Existing acreage planted is given below.

Table AA—Total Cocoa Acreage

	<i>acres</i>
Buganda ...	1,564
Busoga ...	163
Bunyoro ...	348
Toro ...	203
TOTAL ...	2,278

187. Funds became available later in the year to allow the re-establishment of nurseries for the raising of cocoa seedlings, in order to resume planting in 1968. Seedlings are being raised for the planting of a further 2,000 acres.

(b) *Processing*

188. A considerable amount of investigation was carried out at Kituza into the problems associated with cocoa fermentation in Uganda. A system of fermenting firstly in shallow trays followed by fermentation in the normal box is proving very successful. Overseas reports on the quality of the cocoa being produced are favourable.

(c) *Pathology*

189. A plant pathologist provided under the French Aid Scheme assumed duty in November 1967 and has been assigned the full time job of carrying out investigations into *Verticillium Wilt* disease of cocoa.

(d) *Entomology*

190. The Entomology section at Kawanda are carrying out life-cycle studies of the capsids *Helopeltis* and *Sahlbergella* Spp. in the cocoa-growing areas, with the object of finding whether any differences exist between Uganda and West Africa. This work is important in connection with the timing of control sprays.

(e) *Breeding*

191. The 1960 variety trials involving Amazonian varieties imported from West Africa were continued, as was the short-term breeding programme at Kituza.

(g) *Pasture Agronomy*

192. The work on pastures continued to be concerned with the potentialities of ley farming in Northern and Eastern Uganda. Particular emphasis was laid on the establishment of grass/legume leys, responses to fertilizer and the residual effects of leys on subsequent cropping.

193. In the Phosphate Responses Trial, yields of the *Panicum maximum*/*Phaseolus atropurpureus* mixture declined and the responses to dressings of Single Superphosphates was not as great as in the previous year. Nevertheless, the condition of the sward after 4 years of cutting and grazing was considered good. The trial was ploughed out for test cropping at the end of the year.

194. The second year of Growth Curve Trials on *Hyparrhenia rufa*, *P. maximum*, *Centrosema pubescens* and *Stylosanthes gracilis* gave similar results to the first year. Regrowth of the grasses was severely retarded by close and frequent cutting. Yields of the standing crop declined in the dry season, but rapid growth began with the early rains in February, 1968. A similar trial was laid down with *Chloris gayana*.

195. In phosphate, sulphur and potash fertilizer trials with *H. rufa*, *P. maximum*, *C. pubescens* and *Siratro*, all species responded strongly to phosphate

and the legumes also to sulphur. In all trials, yields of plots which received equivalent to 3 cwt/acre superphosphates were 70 to 100 per cent greater than control yields. There was no response to potash.

196. The nitrogen economy trial, designed to determine the contribution made by the legume to a mixed *H. rufa*, *S. gracilis* sward, again gave anomalous results at the end of the year. The mixed sward was yielding almost double that of the pure grass sward which had received 120 lb. nitrogen per acre per annum. The condition of all pure grass swards was poor and it was necessary to plough out the trial at the end of the year.

197. The establishment of *S. gracilis* in a mixture with *H. rufa* was studied. It seemed that the establishment of the legume was benefited by planting at a higher seed rate than normal and planting it before the grass. The legume was retarded by applying nitrogen to the seed bed.

198. Small trials were carried out to assess the effect of inoculation on establishment of *S. gracilis* and *Desmodium intortum* and the value of inclined point quadrants as an estimator of herbage yield.

199. The test cropping of grazing trials was continued to indicate the residual effects of pasture treatments on the growth and yields of subsequent crops. The legume species trial was cropped with sorghum and beans. Both crops gave good responses to residual phosphate, the mean yield of sorghum being increased from 2,050 lb./acre to 2,290 lb./acre, and that of beans from 200 to 230 lb./acre. There was no difference in yield following different grass/legume mixtures.

200. The test crop in the third year of the grass/legume/fertilizer trial was sorghum. A mean yield of 2,800 lb./acre of grain was obtained; large responses to residual phosphate, nitrogen and legume were apparent. The control yield of 3,100 lb./acre was increased to 3,500 lb./acre in plots which had contained legume or had been fertilized with nitrogen in the ley phase, and to 4,300 lb./acre where phosphate had been applied to the ley. These results were obtained two years after the ley was ploughed out and three years after the last phosphate application.

(h) Animal Husbandry

(a) General

201. During the year, in accordance with Government policy, increased emphasis was placed on tick eradication as opposed to control. Two sprays per week were applied using Toxaphene.

202. Exotic cattle for milk production were introduced to Serere during the year, Guernsey animals being provided by Kawanda. This meant that the long projected system of fully ranging the local Zebu stock was at last effected. Benefits from the system include increased calf growth rates and heavier weaning weight. In addition, mechanical milking was introduced with resultant increased labour saving.

203. The cattle continue to be maintained on an all-grass diet (plus salt and water), under a system that could easily be adopted by an improved farmer.

(b) Breeding

204. The breeding programme to improved beef potential of the small East African Zebu continued. A number of heifers reached 550 lb. at 24 to 30 months and were put to the bull earlier than the normal 36 months. One Zebu bull, Albert, produced outstanding progeny and was mated to the best Serere cows.

205. In view of the change of policy with regard to ticks, the experiment to measure the potential of Boran cattle in a tick environment was discontinued.

206. Calf mortality in the absence of East Coast Fever was nil, and all calves born are doing extremely well.

207. The potential of the Boran to local Zebu, under Serere conditions, is now being assessed.

208. The cross-breeding experiment being run in association with Arapai Agricultural College, Ngetta and Kigumba, is doing well and promising results are being obtained. Hereford, Aberdeen Angus and Boran bulls are crossed to local Zebu cows. Some of the resulting Hereford and Angus crosses have been brought to Serere for assessment of their potential on different pasture mixtures.

(c) Grazing Trials

209. A comprehensive series of trials have continued. The grazing management trial completed 4 years under ley and has been ploughd out for test cropping in 1968.

210. A trial, investigating inexpensive methods of improving natural pasture by over-sowing with *S. gracilis* and top-dressing with single superphosphates, has been initiated.

(d) Goat Improvement Scheme

211. The progress made with this project has been limited. Disease has been a problem with the introduced Boer goats, and the local Teso and Mubende goats have shown higher birth weights and a higher twinning percentage. Money was released late in the financial year for the continuation of the scheme.

(i) Staff

212. A large number of Assistant Agricultural Officers were again recruited from Bukalasa and Arapai Agricultural Colleges. Staff housing continued to be a problem in all areas of the country. Many members of staff went on study courses overseas.

(j) Acknowledgments

213. It is a great pleasure to me to convey my heart-felt gratitude to the staff of the Agriculture Department who have tirelessly and devotedly worked for the improvement of Agriculture in Uganda. They have endured many difficulties, yet have pressed forward willingly with their important task.

214. May I also extend my thanks for valuable assistance received from all Foreign Agencies and Governments in the past year; it is greatly appreciated.

215. I wish to acknowledge the co-operation of all Departments of Government and Local Administrations in Uganda. The co-operation and encouragement shown by the Director and staff of the Cotton Research Corporation Station, Namulonge, the East African Agriculture and Forestry Research Organisation and the Dean and staff of the Faculty of Agriculture, Makerere, are deeply appreciated.

H. R. BERUNGA,
Commissioner for Agriculture.

ENTEBBE,

17TH FEBRUARY, 1970.

UGANDA RAINFALL: 1967

Station	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	TOTAL	Met. No.
ABI West Nile 3°05' N.; 30°55' E.	0-0 — 16-4	0-0 — 26-3	23-1 8-4 84-4	67-3 8 126-7	53-6 8 126-9	78-2 11 117-6	130-0 14 132-3	119-2 11 201-6	77-8 13 172-2	197-1 16 190-5	104-2 12 122-1	0-0 — 36-0	850-5 101 1,353-0	Met. No. 86 3002
GULU Acholi 2°45' N.; 32°20' E.	0-0 — 13-2	15-0 2 42-1	39-7 8 89-2	144-0 14 174-4	83-9 15 194-6	149-2 14 150-5	159-6 13 167-4	221-4 19 228-8	143-1 16 176-6	253-5 21 167-0	221-6 18 100-1	19-6 3 46-1	1,450-6 143 1,550-0	Met. No. 87 3200
LIRA (NGETTA) Lango 2°17' N.; 32°56' E.	0-0 — 28-0	25-7 1 36-6	70-7 6 88-0	143-4 14 176-9	254-0 17 191-8	153-4 14 127-1	94-2 9 125-7	208-0 18 218-2	183-5 13 171-1	250-3 19 147-8	137-1 12 86-1	17-1 2 43-5	1,537-4 125 1,440-8	Met. No. 87 3202
MOROTO Karamoja 2°32' N.; 34°36' E.	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	— — —	Met. No. 87 3400
SERERE Teso 1°31' N.; 34°11' E.	2-8 2 23-2	13-8 4 57-2	116-0 11 101-2	214-2 15 210-1	97-7 14 190-2	185-5 11 105-4	121-8 12 115-2	139-5 18 164-4	86-8 11 140-6	189-2 19 125-1	154-8 15 99-9	9-7 2 51-2	1,331-8 134 1,383-7	Met. No. 88 3304
MBALE Mbale 1°06' N.; 34°10' E.	3-3 1 24-9	35-0 2 50-4	88-2 7 95-5	81-9 16 165-6	257-3 17 166-6	63-0 13 119-8	150-4 13 115-3	103-8 14 132-1	114-6 14 108-8	101-0 15 86-7	251-9 17 68-0	6-4 3 43-9	1,256-8 132 1,177-6	Met. No. 88 3402
TORORO Bukedi 0°42' N.; 34°10' E.	27-2 5 49-5	30-9 5 70-9	202-8 16 137-4	222-0 16 227-9	208-1 13 220-6	166-0 13 106-1	43-3 10 96-6	93-0 13 116-0	138-1 17 111-1	152-6 15 125-0	224-3 18 107-7	72-3 5 79-4	1,580-6 146 1,448-2	Met. No. 89 3419
JINJA Busoga 1°28' N.; 33°11' E.	7-7 1 65-6	34-4 5 82-7	127-3 12 124-7	116-0 11 188-2	264-9 13 137-4	75-8 10 61-1	57-6 8 63-0	46-2 6 76-6	87-3 12 93-6	159-2 14 157-5	204-0 21 172-3	109-6 8 96-8	1,380-0 121 1,319-5	Met. No. 89 3343
KABALE Kigezi 1°15' S.; 29°59' E.	34-9 4 60-8	34-7 6 90-1	166-3 15 115-2	158-1 17 138-8	216-3 18 93-6	45-6 4 26-4	23-1 4 19-5	21-1 7 54-2	107-4 11 95-6	58-2 12 96-7	181-0 18 109-6	101-8 11 92-5	1,148-5 127 993-0	Met. No. 91 2900

UGANDA RAINFALL: 1967—continued.

Station	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	TOTAL	Met. No.
MBARARA .. 0° 37' S.; 29° 59' E.	51.1 3 44.3	11.1 2 62.7	34.6 6 94.9	94.2 11 123.4	67.3 7 80.3	12.6 2 23.8	32.6 3 20.6	25.6 3 62.0	98.3 9 96.2	136.6 12 105.1	165.2 19 117.1	22.7 4 75.9	741.9 81.0 906.3	Met. No. 90 3003
FORT PORTAL .. Toro .. 0° 40' W.; 30° 17' E.	6.4 2 35.1	18.1 5 72.1	78.8 10 135.7	217.1 20 190.3	135.2 16 143.5	64.6 11 80.6	100.0 14 59.3	60.9 8 117.3	148.8 19 187.0	274.5 24 219.2	216.1 25 166.8	38.2 6 80.1	1,408.7 160 1,487.0	Met. No. 89 3002
BULINDI .. Bunyoro .. 1° 28' N.; 31° 28' E.	17.3 2 37.7	8.4 2 56.5	64.7 5 107.3	182.5 9 176.4	66.9 9 123.0	124.5 7 88.2	87.3 9 87.8	105.2 11 153.8	119.7 15 161.0	93.1 15 148.4	173.6 17 115.3	12.5 3 56.8	1,055.7 104 1,312.2	Met. No. 88 3106
MASAKA .. Masaka .. 0° 20' S.; 31° 44' E.	12.9 2 51.8	26.2 1 63.1	103.0 12 116.0	115.1 16 179.9	255.3 22 167.7	13.7 6 45.9	67.2 9 35.2	7.1 1 52.5	77.3 10 88.5	134.8 18 101.7	218.4 20 100.3	16.5 6 88.3	1,047.5 123 1,090.9	Met. No. 90 3104
KAKUMIRO .. Mubende .. 0° 46' W.; 31° 19' E.	8.7 2 36.8	0.0 — 56.3	125.7 10 110.3	144.5 11 166.8	120.5 11 102.9	56.3 5 63.0	105.4 6 71.5	41.9 4 127.9	158.0 14 163.7	273.9 21 185.9	206.0 16 142.0	8.9 1 67.5	1,249.8 101 1,294.6	Met. No. 89 3101
SENDA .. Mengo .. 0° 29' N.; 32° 01' E.	5.3 2 47.5	2.8 2 66.0	124.5 11 122.0	118.1 13 168.6	102.1 14 115.5	72.4 8 53.5	80.3 8 47.1	74.2 11 103.8	97.6 12 112.1	227.1 15 145.4	212.8 13 131.9	90.0 7 81.2	1,207.2 116 1,194.6	Met. No. 89 3262
KAMPALA .. Mengo .. 0° 19' N.; 32° 33' E.	21.0 4 59.1	6.4 2 57.2	83.9 9 116.6	170.6 10 173.1	190.1 12 137.1	73.2 11 59.7	66.5 8 52.6	60.7 6 105.1	113.8 13 103.4	184.8 13 115.2	272.1 16 140.6	55.5 8 93.2	1,298.6 112 1,212.9	Met. No. 89 3251
ENTEBBE .. Mengo .. 0° 03' N.; 32° 27' E.	45.5 5 91.5	38.5 1 92.9	129.3 14 166.0	161.9 15 275.4	397.9 22 264.1	206.8 15 103.3	155.0 10 68.7	181.1 9 88.8	63.9 7 81.8	145.0 12 113.3	230.1 15 160.5	72.9 7 120.1	1,827.9 132 1,626.4	Met. No. 89 3266

COTTON PRODUCTION : 1966/67 SEASON

REGION AND ZONE	ACREAGES*		SALES (Tons of Seed Cotton)		HARVESTED YIELD PER ACRE (lb. Seed Cotton)		PRODUCTION (Bales of Lint)	
	Total 1966/67	Mean 1961/62- 1965/66	Total 1966/67	Mean 1961/62- 1965/66	Averages 1966/67	Mean 1961/62- 1965/66	Total 1966/67	Mean 1961/62- 1965/66
<i>Buganda:</i>								
Mengo ..	147,000	207,000	22,381	27,053	341	207	43,216	47,491
Masaka ..	21,000	29,000	3,032	2,547	323	205	5,325	4,602
Mubende ..	56,000	75,000	5,079	6,709	203	198	9,164	11,827
TOTAL ..	223,000	311,000	30,492	36,308	306	249	57,705	63,926
<i>Western:</i>								
Bunyoro ..	86,000	63,000	13,354	6,810	348	233	24,085	12,173
Kazinga Channel ..	24,000	21,000	4,255	3,554	397	362	7,520	6,069
TOTAL ..	109,000	83,000	17,609	12,239	362	270	31,605	18,243
<i>Eastern:</i>								
Busoga ..	550,000	503,000	53,171	44,759	217	191	96,395	80,336
Mbale ..	380,000	387,000	31,767	31,650	187	178	54,649	54,423
Teso ..	323,000	232,000	28,170	18,234	195	115	53,647	31,465
South Teso Segregated ..	36,000	38,000	5,740	4,658	357	268	10,032	8,395
Usuku ..	35,000	25,000	3,468	2,548	222	218	6,225	3,770
TOTAL ..	1,325,000	1,185,000	122,317	101,796	207	185	220,948	178,388
<i>Northern:</i>								
Lango ..	216,000	206,000	30,786	27,473	319	298	54,637	45,946
East Acholi ..	97,000	94,000	9,024	9,152	208	200	15,686	15,212
West Acholi ..	70,000	69,000	7,122	9,114	228	287	12,222	15,055
West Nile ..	134,000	107,000	19,003	12,648	318	240	33,621	23,719
TOTAL ..	517,000	476,000	65,936	58,388	286	268	116,166	99,935
UGANDA TOTAL ..	2,174,000	2,058,000	236,354	206,796	244	216	426,424	360,493

* To the nearest thousand acres.

COTTON PRODUCTION, 1967/68 SEASON

APPENDIX II (b)

Monthly Plantings—Acres

REGION AND ZONE	March	April	May	June	July	August	September	October	Total
<i>Buganda:</i>									
Mengo ..	—	—	11,240	42,961	54,218	36,857	471	—	145,747
Masaka ..	—	—	—	881	6,344	12,262	1,254	—	20,741
Mubende ..	—	—	218	8,567	18,213	8,967	63	—	36,028
TOTAL ..	—	—	11,458	52,409	78,775	58,086	1,788	—	202,516
<i>Western:</i>									
Bunyoro ..	—	—	2,500	20,305	46,202	25,533	—	—	94,540
Kazinga Channel ..	—	—	—	206	3,052	15,682	5,705	—	24,645
TOTAL ..	—	—	2,500	20,511	49,254	41,215	5,705	—	119,185
<i>Eastern:</i>									
Busoga ..	—	5,166	73,864	132,388	150,523	54,256	2,220	—	418,417
Mbale ..	—	14,019	96,519	136,429	108,305	48,750	791	—	404,813
Teso ..	—	22,188	129,441	139,354	80,179	22,645	—	—	393,807
South Teso Segregated ..	—	3,089	13,446	9,838	6,913	2,871	—	—	36,157
Usuku ..	—	3,895	19,322	11,911	2,221	19	—	—	37,368
TOTAL ..	—	48,357	332,592	429,920	348,141	128,541	3,011	—	1,290,562
<i>Northern:</i>									
Lango ..	—	599	20,547	90,804	64,501	15,754	334	—	192,539
East Acholi ..	—	5,931	12,546	43,185	46,124	33,134	5,156	—	146,076
West Acholi ..	—	75	288	12,652	22,517	7,790	313	—	43,635
West Nile ..	—	988	640	48,240	59,345	38,561	6,158	—	153,932
TOTAL ..	—	7,593	34,021	194,881	192,487	95,239	11,961	—	536,182
UGANDA TOTAL ..	Nil	55,950	380,571	697,721	668,657	323,081	22,465	—	2,148,445

All figures derived from revised planting returns submitted each month by D.A.O's.

COTTON: MONTHLY PLANTINGS AS PERCENTAGES OF TOTAL

REGION AND ZONE		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
		1967/68	Mean 1962/63- 1966/67	1967/68	Mean 1962/63- 1966/67	1967/68	Mean 1962/63- 1966/67	1967/68	Mean 1962/63- 1966/67	1967/68	Mean 1962/63- 1966/67	1967/68	Mean 1962/63- 1966/67
<i>Buganda:</i>													
..	..	—	—	7.7	2.7	29.5	22.3	37.2	50.0	25.3	25.8	0.3	6.2
Mengo	..	—	—	—	5.9	4.3	10.3	30.6	18.3	59.1	31.7	6.0	33.8
Masaka	..	—	—	0.6	3.0	23.8	21.5	50.6	29.3	24.9	38.0	0.1	8.2
Mubende	..	—	—	—	—	—	—	—	—	—	—	—	—
TOTAL	..	—	—	5.7	3.0	25.9	21.1	38.9	37.3	28.7	29.4	0.8	9.2
<i>Western:</i>													
Bunyoro	..	—	—	2.6	2.1	21.5	18.5	48.9	48.5	27.0	29.2	—	1.7
Kazinga Channel	..	—	—	—	—	0.8	0.3	12.4	6.2	63.6	47.4	23.2	46.1
TOTAL	..	—	—	2.1	1.6	17.2	14.3	41.3	38.8	34.6	33.4	4.8	11.9
<i>Eastern:</i>													
Busoga	..	1.2	2.0	17.7	20.6	31.6	31.3	36.0	29.9	13.0	15.0	0.5	1.2
Mbale	..	3.5	1.4	23.8	14.5	33.7	31.0	26.8	33.6	12.1	17.7	0.2	1.8
Teso	..	5.6	12.2	32.9	31.0	35.4	29.3	20.4	19.4	5.8	8.1	—	—
South Teso Segregated	..	8.5	11.9	37.2	32.4	27.2	32.0	19.1	12.0	8.0	11.7	—	—
Usuku	..	10.4	20.8	51.7	41.7	31.9	28.4	5.9	8.9	0.1	0.2	—	—
TOTAL	..	3.7	4.7	25.8	21.7	33.3	30.7	27.0	27.9	10.0	13.9	0.2	1.1
<i>Northern:</i>													
Lango	..	—	0.8	10.7	11.3	47.6	41.4	33.5	33.1	8.2	12.4	—	1.0
East Acholi	..	4.0	4.0	8.6	12.1	29.6	25.8	31.6	34.7	22.7	20.5	3.5	2.9
West Acholi	..	0.2	1.4	0.6	5.5	29.0	30.4	51.6	41.0	17.9	20.0	0.7	1.7
West Nile	..	0.6	0.1	0.4	3.3	31.3	26.2	38.6	38.1	25.1	26.6	4.0	5.7
TOTAL	..	1.4	1.1	6.3	8.7	36.4	33.1	35.9	35.9	17.8	18.5	2.2	2.7
UGANDA TOTAL	..	2.6	3.1	17.7	15.4	32.5	29.3	31.1	31.4	15.0	17.8	1.1	3.0

COTTON PRODUCTION

Number of Bales of 400 lb., 1907-1967

Season	Bales (Actual)	Bales (5-year average)	Season	Bales (Actual)	Bales (5-year average)
1907	2,000	—	1936/37 ..	332,000	325,000
1908	4,000	—	1937/38 ..	418,000	335,000
1909	5,000	9,000	1938/39 ..	307,000	344,000
1910	12,000	13,000	1939/40 ..	300,000	326,000
1911	20,000	21,000	1940/41 ..	365,000	264,000
1912/13 ..	26,000	25,000	1941/42 ..	238,000	241,000
1913/14 ..	40,000	27,000	1942/43 ..	112,000	236,000
1914/15 ..	26,000	28,000	1943/44 ..	191,000	208,000
1915/16 ..	22,000	29,000	1944/45 ..	272,000	207,000
1916/17 ..	28,000	26,000	1945/46 ..	227,000	218,000
1917/18 ..	27,000	30,000	1946/47 ..	231,000	258,000
1918/19 ..	36,000	44,000	1947/48 ..	170,000	272,000
1919/20 ..	47,000	48,000	1948/49 ..	391,000	295,000
1920/21 ..	81,000	60,000	1949/50 ..	339,000	325,000
1921/22 ..	48,000	78,000	1950/51 ..	346,000	355,000
1922/23 ..	88,000	108,000	1951/52 ..	380,000	357,000
1923/24 ..	128,000	128,000	1952/53 ..	320,000	349,000
1924/25 ..	196,000	145,000	1953/54 ..	398,000	352,000
1925/26 ..	180,000	155,000	1954/55 ..	300,000	351,000
1926/27 ..	134,000	170,000	1955/56 ..	364,000	357,000
1927/28 ..	138,000	156,000	1956/57 ..	372,000	358,000
1928/29 ..	204,000	157,000	1957/58 ..	351,000	370,000
1929/30 ..	125,000	173,000	1958/59 ..	401,000	371,000
1930/31 ..	189,000	204,000	1959/60 ..	360,000	333,000
1931/32 ..	207,000	220,000	1960/61 ..	370,000	334,000
1932/33 ..	295,000	246,000	1961/62 ..	181,000	330,000
1933/34 ..	286,000	271,000	1962/63 ..	359,000	345,000
1934/35 ..	253,000	296,000	1963/64 ..	379,000	360,000
1935/36 ..	316,000	321,000	1964/65 ..	438,000	410,000
			1965/66 ..	445,000	—
			1966/67 ..	427,000	—

Note: All figures are corrected to 1,000 bales.

CROP PRODUCTION

ESTIMATED ACREAGES UNDER CROPS 1966 AND 1967—AFRICAN CULTIVATION (1)

(Thousand Acres)

CROP	BUGANDA		EASTERN		WESTERN		NORTHERN		TOTAL	
	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967
Beans (Mixed and Cowpeas)	143.1	236.9	294.8	382.7	221.1	250.4	287.9	444.8	946.9	1,314.8
Beans (Soya) ..	1.0	7.8	—	—	*	*	—	—	1.0	7.8
Cassava ..	128.0	175.4	595.0	730.9	183.8	213.7	415.8	470.3	1,322.6	1,590.3
Cocoa ..	1.6	1.6	0.2	0.3	0.5	0.6	—	—	2.3	2.5
Coffee (Arabica) ..	—	0.9	24.4	27.3	18.6	19.1	5.4	5.5	48.4	52.8
Coffee (Robusta) ..	710.4	708.4	47.7	47.7	19.5	20.2	0.1	0.1	777.7	776.4
Cotton ..	223.4	189.6	1,327.9	1,296.0	100.6	119.1	516.8	486.7	2,168.7	2,091.4
Grams ..	0.4	—	20.0	13.1	—	—	—	—	20.4	13.1
Groundnuts ..	126.9	101.7	293.4	284.8	50.0	50.3	199.1	246.9	669.4	683.7
Maize ..	154.6	167.9	206.4	260.0	194.6	130.3	134.6	121.8	690.2	680.0
Millet (Sorghum) ..	37.4	121.6	313.5	258.6	118.8	80.9	260.9	254.8	730.6	715.9
Millet (Finger) ..	21.6	45.0	802.6	915.1	132.1	130.7	462.4	428.9	1,418.7	1,519.7
Millet (Bulrush) ..	—	—	5.0	2.4	—	—	7.9	—	12.9	2.4
Onions ..	0.2	0.5	—	—	1.6	0.6	—	—	1.8	1.1
Peas (Pigeon) ..	—	—	1.9	1.5	0.9	1.5	213.5	244.9	216.3	247.9
Peas (Field) ..	2.9	3.9	—	—	68.6	73.7	—	—	71.5	77.6
Plantains ..	759.7	860.8	518.8	534.5	273.1	308.8	18.2	21.4	1,569.8	1,725.5
Potatoes (Sweet) ..	113.6	124.5	373.5	396.6	342.1	291.6	155.6	245.7	1,569.8	1,058.4
Potatoes (Solanum) ..	1.3	2.5	—	0.1	20.4	20.8	—	—	21.7	23.4
Rice ..	—	—	2.1	2.9	1.9	2.3	4.0	9.0	8.0	14.2
Sim-sim ..	1.6	35.7	17.4	19.2	2.0	3.9	217.2	263.7	238.2	322.5
Tobacco (Fire-cured) ..	0.1	0.1	—	—	3.6	5.2	5.0	5.9	8.7	11.2
Tobacco (Flue-cured) ..	—	—	—	—	0.6	7.1	2.8	3.6	3.4	10.7
Tea ..	—	0.6	—	—	4.9	6.2	—	—	5.4	6.8
Wheat ..	—	—	—	—	4.1	3.2	—	—	4.1	5.2
Sugar-cane ..	2.0	8.5	3.7	2.8	6.4	0.5	10.1	12.7	22.2	24.5

*Under 50 acres.

† See notes to Tables (III) (b) to (III) (e). An acreage showed mixtures even if the crop is not dominant and has only a very low plant population.
All figures corrected to the nearest 100 acres.

ESTIMATED ACREAGES UNDER CROPS, 1966 AND 1967—AFRICAN CULTIVATION

BUGANDA REGION

(Thousand Acres)

CROP	WEST MENG		EAST MENG		MASAKA		MUBENDE		TOTAL	
	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967
Beans (Mixed and Cowpeas)	35.8	41.8	36.9	62.6	47.2	89.9	23.2	42.6	143.1	236.9
Beans (Soya)	1.0	1.8	—	1.2	—	1.3	—	3.5	1.0	7.8
Cassava	24.8	19.8	67.4	83.4	8.8	18.8	27.0	53.4	128.0	175.4
Cocoa	—	—	1.6	1.6	—	—	—	—	1.6	1.6
Coffee (Arabica)	—	—	—	—	—	0.9	—	—	—	0.9
Coffee (Robusta)	138.3	138.3	275.1	275.1	186.8	188.1	110.2	106.9	710.4	708.4
Cotton	24.1	28.4	122.9	103.4	20.9	21.8	55.5	36.0	223.4	189.6
Grams	—	—	0.4	—	—	—	—	—	0.4	—
Groundnuts	27.4	17.7	38.1	47.9	13.0	20.1	48.4	16.0	126.9	101.7
Maize	23.0	18.9	87.3	50.5	26.7	65.1	17.6	33.4	154.6	167.9
Millet (Sorghum)	10.9	16.5	12.7	20.5	10.1	29.5	3.7	55.1	37.4	121.6
Millet (Finger)	2.2	2.5	16.9	19.5	1.2	3.0	1.3	20.0	21.6	45.0
Millet (Bulrush)	—	—	—	—	—	—	—	—	—	—
Onions	—	—	—	—	0.2	0.5	—	*	0.2	0.5
Peas (Pigeon)	—	—	—	—	—	—	—	—	—	—
Peas (Field)	—	—	0.1	0.1	2.8	3.8	—	—	2.9	3.9
Plantains	80.2	80.0	374.4	485.0	214.4	194.2	90.7	101.6	759.7	860.8
Potatoes (Sweet)	42.6	19.8	45.5	53.6	14.1	22.2	10.5	28.9	113.7	124.5
Potatoes (Solanum)	0.7	0.9	0.2	0.3	0.4	0.9	—	0.4	1.3	2.5
Rice	—	—	—	—	—	—	—	—	—	—
Sim-sim	*	—	1.6	9.0	—	—	—	26.7	1.6	35.7
Tobacco (Fire-cured)	—	—	—	—	—	—	0.1	0.1	0.1	0.1
Tobacco (Flue-cured)	—	—	—	—	—	—	—	—	—	—
Tea	—	—	*	0.1	0.1	0.1	0.4	0.4	0.5	0.6
Wheat	—	—	—	—	—	—	—	—	—	—
Sugar-cane	—	—	2.0	2.0	—	6.5	—	—	2.0	8.5

* Under 50 acres.

All figures corrected to the nearest 100 acres.

ESTIMATED ACREAGES UNDER CROPS, 1966 AND 1967—AFRICAN CULTIVATION

EASTERN REGION

(Thousand Acres)

CROP	BUSOGA		BUKEDI		BUGISU AND SEBELI		TESO		KARAMOJA		TOTAL	
	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967
Beans (Mixed and Cowpeas)	34.5	42.1	62.6	92.7	70.5	101.3	126.7	146.0	0.5	0.6	294.8	382.7
Beans (Soya)	—	—	—	—	—	—	—	—	—	—	—	—
Cassava	119.9	116.7	108.8	206.2	42.2	55.1	323.7	351.9	0.4	1.0	595.0	730.9
Cocoa	0.2	0.3	—	—	24.4	27.3	—	—	—	—	0.2	0.3
Coffee (Arabica)	—	—	—	—	—	—	—	—	—	—	24.4	27.3
Coffee (Robusta)	46.7	47.0	1.0	1.0	—	—	—	—	—	—	47.7	48.7
Cotton	549.9	418.4	304.5	342.4	73.4	61.7	395.0	467.9	5.1	5.6	1,327.9	1,296.0
Grams	—	—	—	—	—	—	20.0	13.1	—	—	20.0	13.1
Groundnuts	96.4	65.4	69.6	63.6	9.8	20.6	114.6	134.6	3.0	0.6	293.4	284.8
Maize	74.0	78.2	51.7	45.4	69.4	114.7	10.1	13.8	1.2	7.9	206.4	260.0
Millet (Sorghum)	2.9	4.4	37.8	35.4	7.5	12.6	155.3	164.8	110.0	41.4	313.5	258.6
Millet (Finger)	153.8	173.6	230.8	239.1	57.3	60.9	358.2	438.2	2.5	3.3	802.6	915.1
Millet (Bulrush)	—	—	—	—	—	—	—	—	5.0	2.4	5.0	2.4
Onions	—	—	—	—	—	—	—	—	—	—	—	—
Peas (Pigeon)	—	—	—	—	—	—	1.9	1.1	—	0.4	1.9	1.5
Peas (Field)	—	—	—	—	—	—	—	—	—	—	—	—
Plantains	279.5	286.5	122.2†	125.5†	109.7†	114.5†	7.1	7.6	0.3	0.4	518.8	534.5
Potatoes	159.8	104.1	34.7	120.2	34.7	44.0	143.2	125.8	1.1	2.5	373.5	396.6
Potatoes (Sweet)	—	—	—	—	—	0.1	—	—	—	—	—	0.1
Potatoes (Solanum)	—	—	—	—	—	—	—	—	—	—	—	—
Rice	0.1	0.3	0.3	0.4	—	—	1.7	2.2	—	—	2.1	2.9
Sim-sim	1.6	2.8	3.0	6.0	—	—	10.6	9.0	2.2	1.4	17.4	19.2
Tobacco (Fire-cured)	—	—	—	—	—	—	—	—	—	—	—	—
Tobacco (Flue-cured)	—	—	—	—	—	—	—	—	—	—	—	—
Tea	—	—	—	—	—	—	—	—	—	—	—	—
Wheat	—	—	—	—	—	2.0	—	—	—	—	—	2.0
Sugar-cane	3.6	2.5	—	—	—	—	0.1	0.3	—	—	3.7	2.8

*Under 50 acres.

†Based on census figure.

All figures corrected to the nearest 100 acres.

ESTIMATED ACREAGES UNDER CROPS, 1966 AND 1967—AFRICAN CULTIVATION

WESTERN REGION

(Thousand Acres)

CROP	ANKOLE		BUNYORO		KIGEZI		TORO§		TOTAL	
	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967
Beans (Mixed and Cowpeas)	29.3	30.4	24.6	37.1	135.3	145.8	31.9	37.1	221.1	250.4
Beans (Soya) ..	—	—	—	—	—	—	*	*	*	*
Cassava ..	55.6	79.7	38.1	37.3	1.3	1.9	88.8	94.8	183.8	213.7
Cocoa ..	—	—	0.3	0.4	—	—	0.2	0.2	0.5	0.6
Coffee (Arabica)	5.7	5.9	0.9	0.9	6.0	6.2	6.0	6.1	18.6	19.1
Coffee (Robusta)	8.0	8.0	4.3	4.9	1.5	1.5	5.7	5.8	19.5	20.2
Cotton ..	3.4	2.4	77.1	94.5	0.2	0.2	19.9	22.0	100.6	119.1
Grams ..	—	—	—	—	—	—	—	—	—	—
Groundnuts ..	20.9	20.3	13.0	15.1	5.1	5.1	11.0	9.8	50.0	50.3
Maize ..	7.9	7.1	20.3	41.7	95.2	62.3	71.2	19.2	194.6	130.3
Millet (Sorghum)	18.2	16.6	3.4	5.1	87.3	47.1	9.9	12.1	118.8	80.9
Millet (Finger)	63.3	61.6	13.0	15.0	33.5	35.2	22.3	18.9	132.1	130.7
Millet (Bulrush)	—	—	—	—	—	—	—	—	—	—
Onions ..	0.8	—	0.1	0.2	—	—	0.7	0.4	1.6	0.6
Peas (Pigeon)	—	—	0.9	1.5	—	—	*	*	0.9	1.5
Peas (Field) ..	4.9	6.9	—	—	63.7	66.8	—	—	68.6	73.7
Plantains ..	138.0 †	145.0 †	46.3 †	69.6	31.6 †	35.1 †	57.2 †	59.1 †	273.1	308.8
Potatoes (Sweet)	32.3	38.9	23.4	20.7	268.5	213.3	17.9	18.7	342.1	291.6
Potatoes (Solanum)	0.4	0.5	0.3	0.2	19.2	19.1	0.5	1.0	20.4	20.8
Rice ..	*	—	—	—	—	—	1.9	2.3	1.9	2.3
Sim-sim ..	—	0.1	2.0	3.7	—	—	*	0.1	2.0	3.9
Tobacco (Fire-cured)	—	—	3.6	5.2	—	—	*	*	3.6	5.2
Tobacco (Flue-cured)	0.3	6.9	—	—	0.3	0.2	—	—	0.6	7.1
Tea † ..	1.0	1.4	0.2	0.3	0.7	0.9	3.0	3.6	4.9	6.2
Wheat ..	—	—	—	—	4.1	3.2	—	—	4.1	3.2
Sugar-cane ..	—	—	0.1	—	—	—	6.3	0.5	6.4	0.5

* Under 50 acres.

† Based on census figures.

‡ Based on ratio of census figures to estimates for other districts (Toro was excluded from the census).

§ Except for the estimated acreages of plantains, 1966 and 1967 figures for Toro exclude the counties of Bwamba, Busongora and Bukonjo where disturbances prevented any estimates being made.

All figures corrected to the nearest 100 acres.

ESTIMATED ACREAGES UNDER CROPS, 1966 AND 1967—AFRICAN CULTIVATION

NORTHERN REGION

(Thousand Acres)

CROP	LANGO		ACHOLI		WEST NILE		MADI		TOTAL	
	1966	1967	1966	1967	1966	1967	1966	1967	1966	1967
Beans (Mixed and Cowpeas)	109.3	207.3	25.3	92.8	124.7	128.6	28.6	16.1	287.9	444.8
Beans (Soya)	—	—	—	—	—	—	—	—	—	—
Cassava	138.0	175.1	90.9	99.0	174.6†	151.2†	12.3†	45.0†	415.8	470.3
Cocoa	—	—	—	—	—	—	—	—	—	—
Coffee (Arabica)	—	—	—	—	5.4	5.5	—	—	5.4	5.5
Coffee (Robusta)	—	—	—	—	0.1	0.1	—	—	0.1	0.1
Cotton	216.2	192.5	166.9	140.3	109.1	130.4	24.6	23.5	516.8	486.7
Grams	—	—	—	—	—	—	—	—	—	—
Groundnuts	49.4	66.5	53.4	94.3	52.1	67.6	44.2	18.5	199.1	246.9
Maize	28.2	34.4	26.4	28.4	70.3	50.7	9.7	8.3	134.6	121.8
Millet (Sorghum)	104.4	138.1	75.9	55.7	37.3	37.3	43.3	23.7	260.9	254.8
Millet (Finger)	181.1	185.8	128.1	107.5	140.7	122.1	12.5	13.5	462.4	428.9
Millet (Bulrush)	—	—	7.9	—	—	—	—	—	7.9	—
Onions	—	—	—	—	—	—	—	—	—	—
Peas (Pigeon)	174.7	199.3	27.7	26.1	11.1	17.2	—	2.3	213.5	244.9
Peas (Field)	—	—	—	—	—	—	—	—	—	—
Plantains	10.4	10.1	1.3	3.2	5.9†	6.4†	0.6†	1.7†	18.2	21.4
Potatoes (Sweet)	42.3	29.2	42.0	172.0	43.0	27.3	28.3	17.2	155.6	245.7
Potatoes (Solanum)	—	—	—	—	—	—	—	—	—	—
Rice	1.4	6.0	0.1	2.3	0.1	0.3	2.4	0.4	4.0	9.0
Sim-sim	83.3	77.0	77.5	115.1	43.9	53.6	12.5	18.0	217.2	263.7
Tobacco (Fire-cured)	—	—	—	—	5.0	5.9	—	—	5.0	5.9
Tobacco (Flue-cured)	*	0.1	0.9	1.1	1.9	2.4	—	—	2.8	3.6
Tea	—	—	—	—	—	—	—	—	—	—
Wheat	—	—	—	—	—	—	—	—	—	—
Sugar-cane	*	0.1	—	—	10.0	11.2	0.1	1.4	10.1	12.7

* Under 50 acres.

† Based on census figure.

All figures corrected to the nearest 100 acres.

CROP PRODUCTION
QUANTITIES MARKETED AND
(Values Based on Prices)

REGION/DISTRICT	ROBUSTA COFFEE		ARABICA COFFEE		ALL COFFEES
	Quantity Clean Equivalent	Value *	Quantity Clean Equivalent	Value *	Value
	Tons	£	Tons	£	£
Eastern:					
Busoga	2,440	203,355	—	—	203,355
Bugisu/Sebei	—	—	5,876	1,389,349	1,389,349
Bukedi	—	—	—	—	—
Teso	—	—	—	—	—
Karamoja	—	—	—	—	—
TOTAL ..	2,440	203,355	5,876	1,389,349	1,592,704
Northern:					
Lango	—	—	—	—	—
Acholi	—	—	—	—	—
West Nile	12	914	940	218,488	219,402
Madi	—	—	—	—	—
TOTAL ..	12	914	940	218,488	219,402
Western:					
Bunyoro	1,527	127,301	9	1,626	128,927
Toro	741	61,740	638	117,410	179,150
Kigezi	716	59,670	736	145,290	204,960
Ankole	4,498	374,850	2,040	375,332	750,182
TOTAL ..	7,482	623,561	3,423	639,658	1,263,212
Buganda:					
East Mengo	133,554	11,990,285	1,364	198,195	12,188,480
West Mengo					
Masaka					
Mubende					
TOTAL ..	133,554	11,990,285	1,364	198,195	12,188,480
UGANDA TOTAL ..	143,482	12,818,115	11,603	2,445,690	15,263,800

NOTE: (1) Crops included in this table are those for which quantities marketed and values which considerable quantities are marketed, are not included as reliable estimations of Sales and values.

(2) Production of coffee formerly shown as estate production is not included in this table.

* The method of estimating the value of coffee paid to growers has been changed and the values are now based on the prices paid to growers.

ION
 IMATED VALUES, 1967
 d to Growers)

APPENDIX IV

SEED COTTON (1966/67 SEASON)		TOBACCO: FLUE-CURED (Cured-Leaf)		TOBACCO: FIRE-CURED (Cured-Leaf)		ALL TOBACCO	TOTAL VALUE *	
Quantity	Value	Quantity	Value	Quantity	Value	Value	1966	1967
Tons	£	Tons	£	Tons	£	£	£	£
53,171	2,257,914	—	—	—	—	—	2,983,623	2,461,269
6,000	248,018	—	—	—	—	—	2,629,585	1,637,367
25,492	1,077,393	—	—	—	—	—	1,899,270	1,077,393
37,203	1,605,857	—	—	—	—	—	2,159,523	1,605,857
995	27,356	—	—	—	—	—	20,660	27,356
122,861	5,216,538	—	—	—	—	—	9,692,661	6,809,242
30,786	1,353,195	9	984	—	—	984	2,395,533	1,354,179
15,603	689,075	334	112,812	—	—	112,812	1,623,346	801,887
15,592	679,506	1,517	545,357	1,238	97,073	642,430	1,539,276	1,541,338
3,411	144,320	*	90	—	—	90	222,603	144,410
65,392	2,866,096	1,860	659,243	1,238	97,073	756,316	5,780,758	3,841,814
13,354	573,644	—	—	758	34,700	34,700	795,955	737,271
3,586	155,100	—	—	—	—	—	97,870	334,250
54	2,200	15	4,672	—	—	4,672	146,865	211,832
615	26,183	—	—	—	—	—	584,635	776,365
17,609	757,127	15	4,672	758	34,700	39,372	1,625,325	2,059,718
18,715	804,874	—	—	—	—	—	—	—
3,666	174,370	—	—	—	—	—	18,362,424	13,519,996
3,032	133,452	—	—	—	—	—	—	—
5,079	218,169	—	—	7	651	651	—	—
30,492	1,330,865	—	—	7	651	651	18,362,424	13,519,996
236,354	10,170,626	1,875	663,915	2,003	132,424	796,339	35,461,168	26,230,770

are known with reasonable accuracy. Crops such as maize and groundnuts, of
 ue are not available.

ible.
 re the figures for 1966 are strictly not comparable.

OVERSEAS EXPORT OF AGRICULTURAL PRODUCE, 1965-1967

ARTICLE	UNIT	QUANTITIES			VALUE IN £		
		1965	1966	1967	1965	1966	1967
<i>Oilseeds and Products:</i>							
Castor Seed	Tons	1,618	1,926	1,617	69,402	81,459	74,560
Groundnuts	Tons	316	8,121	1,193	24,595	474,553	71,415
Sesame Seed	Tons	810	849	3,350	56,451	68,918	281,040
Sunflower Seed	Tons	105	66	23	4,320	4,221	1,367
Cotton Seed Cake	Tons	68,025	70,691	72,344	1,795,099	1,952,457	1,971,218
Cotton Seed Oil	Tons	861	87	123	118,642	13,821	15,635
Other Vegetable Oils	Tons	6	2	2	1,481	204	437
Other Oilseed Cakes, Meals and other Vegetable Oil residues	Tons	2,047	838	1,375	45,850	27,196	46,525
<i>Fibres:</i>							
Cotton, raw	Tons	68,002	68,699	70,822	16,761,627	15,344,586	15,161,189
Sisal	Tons	143	3	—	10,142	4,099	—
<i>Beverage Crops and Tobacco:</i>							
Coffee, not roasted	Tons	155,295	164,647	156,959	30,421,334	34,783,274	35,599,781
Tea	Tons	6,667	8,688	9,210	2,388,418	3,151,215	3,476,188
Cocoa	Tons	4	20	10	250	3,208	2,025
Unmanufactured Tobacco	Tons	335	528	124	67,409	127,883	34,004
Manufactured Tobacco	Lb.	—	1,071	25,550	—	518	14,071
<i>Spices and Drugs:</i>							
Chillies	Tons	198	402	454	56,124	126,975	95,829
Papain	Tons	175	113	176	262,669	123,286	301,369
Vanilla	Tons	3	6	3	7,946	16,489	9,225
<i>Beans and Pulses:</i>							
Soya Beans	Tons	78	150	1,277	2,559	6,891	58,060
Others	Tons	550	1,749	512	22,852	45,481	18,240
<i>Cereals:</i>							
Maize (unmilled)	Tons	1,619	27,747	1,792	42,255	570,591	30,258
Maize germ meal	Tons	2,255	8,698	8,232	44,631	165,629	143,735
Others (unmilled)	Tons	299	3,116	1,961	10,796	66,708	30,865
<i>Miscellaneous:</i>							
Rubber	Tons	—	2	—	—	433	—
Ethyl Alcohol	Imp. Gal.	985	308	556	332	159	302
Sugar	Tons	489	402	3,558	30,388	16,375	141,258
TOTAL £					52,245,572	57,176,629	57,577,596

Source: East African Customs and Excise Annual Trade Reports, 1965, 1966 and 1967.

EXPORTS OF AGRICULTURAL PRODUCE TO KENYA AND TANZANIA, 1967

ARTICLE	UNIT	QUANTITIES			VALUE IN £		
		To Kenya	To Tanzania	Total	To Kenya	To Tanzania	Total
<i>Oilseeds and Products:</i>							
Cotton Seed Cake	Tons	1,173	—	1,173	29,147	—	29,147
Other Oilseed Cakes, Meals and other Vegetable Oil Residues ..	Tons	2,355	—	2,355	67,874	—	67,874
Sesame Seed	Tons	198	25	223	15,552	2,033	17,585
Groundnuts	Tons	96	353	449	5,236	20,452	25,688
Cotton Seed Oil	Tons	6,604	870	7,474	806,664	110,404	917,068
Groundnuts Oil	Tons	124	—	124	15,110	—	15,110
Other Vegetable Oils	Tons	16	*	16	2,428	20	2,448
<i>Beverage Crops and Tobacco:</i>							
Coffee, not roasted	Tons	*	—	*	3	—	3
Tea	Tons	208	47	255	59,820	8,856	68,676
Unmanufactured Tobacco	Lb.	4,717,028	1,379,362	6,096,390	957,665	222,019	1,179,684
Cigars, Cheroots and Manufactured Tobacco	Lb.	75,582	32,463	108,045	62,148	25,433	87,581
<i>Spices:</i>							
Chillies	Tons	43	*	43	5,822	52	5,874
Others	Tons	40	2	42	9,960	260	10,220
<i>Fibres:</i>							
Cotton Linters	Tons	19	1	20	434	18	452
Cotton waste, not carded or combed	Tons	225	54	279	24,651	4,182	28,833
<i>Cereals:</i>							
Maize (unmilled)	Tons	*	8	8	11	184	195
Millet	Tons	2,597	108	2,705	62,461	2,347	64,808
Others	Tons	308	14	322	12,481	500	12,981
<i>Brans, Pollards, Sharps and by-products of Cereals, Grains and Leguminous Vegetables:</i>							
Maize germ meal	Tons	38	162	200	1,106	2,357	3,463
Others	Tons	4,955	13	4,968	69,369	165	69,534
<i>Pulses:</i>							
Beans, Peas and Lentils	Tons	8,288	2,694	10,982	229,798	71,586	301,384
<i>Miscellaneous:</i>							
Rubber	Tons	—	—	—	—	—	—
Ethyl Alcohol	Imp. Gal.	91,929	40,044	131,973	30,578	13,924	44,502
Sugar	Tons	28,085	1,000	29,085	1,235,445	42,870	1,278,315
Jaggery	Tons	1,633	—	1,633	6,189	—	6,189
Molasses	Tons	1,516	—	1,516	3,153	—	3,153
TOTAL £					3,712,622	527,592	4,240,214

*Under $\frac{1}{2}$ ton.

Source: East African Customs & Excise Annual Trade Report, 1967.

CROP PRODUCTION

Plantation Crop Production, 1966 and 1967

CROP	PRODUCTION UNIT	ESTIMATED ACREAGES		ESTIMATED PRODUCTION			
				Quantity		Value	
		1966	1967	1966	1967	1966	1967
SUGAR	Estates ..	42,924	45,457	(Tons)	(Tons)	£	£
	Outgrowers..	N/A	N/A	125,478	135,243	5,107,620	5,462,755
TEA ..	Estates ..	26,869	27,446	}	11,037	11,064	4,079,380
	Outgrowers..	5,504	7,083				
SISAL	Estates ..	2,300	2,300	nil	nil	—	—
COCOA	Estates ..	237	237	}	24	21	6,466
	Smallholdings	2,329*	2,329*				

* Includes 51 acres grown on departmental farms.

N/A= Not available.

PRICES PAID TO FARMERS : 1967

Cents per lb.

Produce	Centres	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
*BEANS ..	Kampala ..	25	25	30	30	36	25	20	20	25	20	19	18
	Iganga ..	25	20	25	—	30	—	15	—	20	18	20	20
	Soroti ..	25	27	30	35	40	30	30	—	26	25	25	25
	Fort Portal	25	25	28	40	40	20	18	20	20	18	—	18
*DRIED CASSAVA ..	Kampala ..	12	10	12	10	10	10	10	7	12	12	—	—
	Iganga ..	7	—	7	—	6	—	5	—	5	—	—	7
	Soroti ..	12	—	10	8	8	9	10	—	—	6	—	7
	Fort Portal	—	—	—	—	—	—	—	—	—	—	—	—
*SHELLED GROUNDNUTS	Kampala ..	56	56	55	63	80	58	43	44	45	46	45	56
	Iganga ..	48	60	65	—	70	—	70	—	40	40	40	42
	Soroti ..	55	60	60	65	70	70	40	—	46	45	45	50
	Fort Portal	60	50	50	70	75	67	43	—	43	42	47	50
*UNSHELLED GROUNDNUTS ..	Kampala ..	30	34	34	34	47	25	24	26	28	28	27	32
	Iganga ..	28	40	40	—	30	—	20	—	26	26	28	27
	Soroti ..	27	30	30	35	35	30	—	40	25	24	25	30
	Fort Portal	—	—	—	—	—	—	20	—	—	—	—	—
MAIZE ..	Kampala ..	12	12	12	17	17	18	17	9	8	8	7	6
	Iganga ..	12	11	11	—	15	—	12	—	7	6	8	6
	Soroti ..	18	15	15	18	20	22	25	—	10	10	9	10
	Fort Portal	7	7	9	12	13	14	—	9	8	7	10	7
*SORGHUM ..	Kampala ..	15	15	25	40	45	20	14	14	14	12	—	12
	Iganga ..	—	15	15	—	40	—	10	—	—	—	13	20
	Soroti ..	20	15	15	25	15	15	25	—	12	35	—	12
	Fort Portal	20	—	15	40	45	25	—	—	—	—	15	25
*FINGER MILLET ..	Kampala ..	—	—	20	26	22	—	17	20	21	20	20	20
	Iganga ..	25	25	25	—	20	—	13	—	20	—	—	20
	Soroti ..	25	27	27	25	26	30	35	—	20	20	20	20
	Fort Portal	25	—	25	—	20	22	—	20	—	20	20	20

POPULATION AND AVAILABILITY OF LAND

Region/District	Total area <i>Sq. miles</i>	Area of land excluding open water, swamps and reserved forests <i>Sq. miles</i>	Cultivated area <i>1,000 acres</i>	Population*	Population Density <i>Per sq. mile</i>	Cultivated land per head of population <i>Acres</i>	Estimated available land per head of population <i>Acres</i>	Ratio of available land to cultivated land
<i>Buganda:</i>								
Mengo ..	14,417	9,221	1,199	1,499,000	163	0.8	4.1	4.9
Masaka ..	7,978	3,649	485	501,000	137	1.0	4.7	4.8
Mubende ..	2,701	2,570	185	107,000	42	1.7	15.4	8.9
TOTAL ..	25,096	15,440	1,869	2,107,000	136	0.9	4.7	5.3
<i>Eastern:</i>								
Busoga ..	6,940	3,133	994	736,000	234	1.4	2.7	2.7
Sebei and Mbale Township	1,677	1,170	630	402,000	344	1.6	1.9	1.2
Bukedi ..	1,786	1,533	784	431,000	281	1.8	2.3	1.3
Teso ..	4,954	4,249	943	475,000	112	2.0	5.7	2.9
Karamoja ..	9,230	8,094	125	194,000	24	0.6	26.7	41.4
TOTAL ..	24,587	18,179	3,476	2,238,000	123	1.6	5.2	3.3
<i>Northern:</i>								
Acholi ..	10,854	10,347	580	319,000	31	1.8	20.8	11.4
Lango ..	5,054	4,333	920	395,000	91	2.3	7.0	3.0
West Nile/Madi	6,051	5,252	788	481,000	92	1.6	7.0	4.3
TOTAL ..	21,959	19,932	2,288	1,195,000	60	1.9	10.7	5.6
<i>Western:</i>								
Bunyoro ..	5,935	4,025	230	134,000	33	1.7	19.2	11.2
Toro ..	5,233	3,920	350	391,000	100	0.9	6.4	7.2
Ankole ..	6,276	5,378	553	592,000	110	0.9	5.8	6.2
Kigezi ..	2,039	1,689	546	538,000	319	1.0	2.0	2.0
TOTAL ..	19,483	15,012	1,679	1,655,000	110	1.0	5.8	5.7
UGANDA TOTAL ..	91,125	68,563	9,312	7,195,000	105	1.3	6.1	4.7

† Estimates for January, 1967, based on 1959 Census of Population and inter-censal rates of growth. This calculation does not take into account internal migration between districts. Figures are given to the nearest thousand.

DEPARTMENT OF AGRICULTURE
Disposition of Staff as at 1st July 1967

1. EXTENSION

<i>Title</i>					<i>Name</i>
<i>Acting Commissioner for Agriculture</i>	..	..	..	..	H. R. Berunga, M.B.E.
<i>Acting Deputy Commissioner for Agriculture</i>	..	..	..	..	P. F. Kunya.
<i>Assistant Commissioners for Agriculture</i>	..	..	..	..	F. J. Luswata. E. A. Odeke.
<i>Senior Agricultural Officers</i>	..	..	..	..	G. L. Kigundu, M.B.E. S. M. N. Kijambu. P. M. Sali. T. K. Otim, M.B.E.
<i>Agricultural Officers</i>	..	..	..	..	J. C. Ssozi. J. B. Warren. V. Kirabokyamaria. C. Baryomunsi. J. K. Kabigabwa. F. K. Bakwega. M. Okai. Y. Mwaule. F. A. Ojacor. F. X. Lubega. S. N. Mabosi. R. A. Manyindo. D. E. Kawalya. V. P. K. Wamunya. T. N. Bucyanayandi. D. A. Omoding. B. L. Kiwuwa. A. B. Wandera. G. C. Olok. A. O. M. Othieno. E. H. S. Gapfakubaho. E. S. Katarikawe. E. R. Kanyari. E. F. Bajunirwe. J. B. N. Mubiru. A. L. Kyeyune-Sendagi. J. A. Menezes. J. H. Appell. G. A. Lematia. E. A. Nyakana. E. Takhuli. W. A. Bagadira. A. S. Okello.
<i>Agricultural Officers (Economist)</i>	..	..	..	..	J. S. Ikara. G. W. B. Gowa. J. J. Obbo. L. E. Eturu. D. M. Pudsey.

EXTENSION—*continued*

Title	Name
<i>Principal Assistant Agricultural Officers</i>	A. G. K. Will. S. M. B. Mutagwanya. Y. E. Onaba. Major T. F. Ellis. H. G. N. Semambo.
<i>Senior Agricultural Officers</i>	J. G. Wilson. A. G. Kibulo. Z. N. Wanyama. Y. Yigga. E. B. Rwakaikara. J. R. Mayne. T. Opio. A. S. N. Mukacha. E. R. Kaahwa. V. V. Millet. Major J. E. Ludlow. N. Oldacre.
<i>Assistant Agricultural Officers and Field Officers</i>	I. M. Bulikiro. E. B. Sarulo. C. M. Kapalaga. L. L. Kyeyune-Ssentongo. A. Kyalimpa. A. Bitonder-Ubusa. L. Sebuwufu. N. A. Ecodu. A. K. Rwomubitoke. J. W. Ssemutike. S. W. Igaga. J. B. Sseguya. J. Lando. S. J. Mujalasa. A. Y. B. Ayazika. S. K. Mboneraho. S. J. Ibanda. P. Kasumbein. D. M. Kawuki. P. J. Otto. E. Oriokot. P. K. Mutumba. H. Nyamwegendaho. G. W. Katuura. B. S. Mugambani. E. N. Wasubire. C. Lukwago. J. B. Katusabe. J. E. Abamile. M. Kagoro. A. F. Wambuzi. L. Ekoel. P. Etyang. A. Wasaba.

EXTENSION—*continued*

Title	Name
<i>Assistant Agricultural Officers and Field Officers—continued</i>	M. Bamugye.
	H. Oede.
	E. J. Isiko.
	D. M. Wadero.
	M. Wareka.
	E. S. Waneroba.
	J. M. Ogole.
	L. L. Nyeko.
	R. O. E. Osara.
	B. L. Tauti.
	F. B. K. Kisige.
	G. Kinyonyi.
	J. E. Alibawani.
	M. W. Okot.
	T. E. Onyango.
	C. E. Walusimbi.
	S. Olira.
	W. M. G. Gibutayi.
	W. Kakaire.
	S. K. Kirevu.
	Z. J. O. Olum.
	V. Drappako.
	F. P. Aisu.
	S. S. Issa.
	A. E. Menya.
	J. S. Elimu.
	E. S. Serunjogi.
	B. Masaba.
	A. Semana.
	J. P. Ekabu.
	J. S. Okot.
	L. O. O. Oryema.
	M. Kakande.
	P. M. Kaye.
	J. A. C. K. Atiku.
	P. K. Kisembo.
	A. M. Lyazi.
	L. Kasimagwa.
	H. Olupot.
	F. S. Kasule.
	G. Okiira.
	B. A. Murgu-Acel.
	A. Wasswa.
	D. S. Ebalu.
	P. S. Mubiru.
	E. Kalugwe.
	S. Sebowa (Miss).
	D. Kibirige (Miss).
	E. M. Bakarangangh.
	E. R. Byaruhanga.
	V. G. Okello.
	L. Kiwanuka.
	S. B. Mukidi.

EXTENSION—*continued*

Title				Name
Assistant Agricultural Officers and Field Officers—continued				.. N. K. Buwobo. J. F. Segobe. Ocuma-Mingo. P. C. B. Lukony. L. Ongodia. N. Amollo. A. M. Masembe.
2. MECHANICAL AGRICULTURAL DEVELOPMENT SCHEMES				
Chief Agricultural Development Officer				 (Vacant).
Senior Agricultural Engineer				 W. T. Brown.
Agricultural Engineers				 W. B. S. Munobwa. H. D. Kaketo.
Agricultural Officers				 N. O. Z. Sakio. E. H. S. Gapfakubaho. S. N. Kalyango.
Principal Assistant Agricultural Officers				 J. M. Luzinda. J. N. Kimoimo. S. L. Takirambudde. E. Kyagaba. H. B. Miller.
Senior Assistant Agricultural Officers				 S. B. Kikule. L. L. Lubwa.
Soil Conservation Engineer				 (Vacant).
Assistant Agricultural Officers				 E. Serunjogi. L. O. O. Oryema. C. Sekayiba. Y. J. Kalongo-Bamwete. T. O. A. Ocarda. E. A. Omunyokol. A. K. Byaruhanga. J. Katebalirwe. D. K. Mponye. G. K. Tibaijuka. J. Ekayu. E. Nsereko. E. L. Wavamuno. Z. N. Opio. A. Rwakaizi. F. S. Emuran. K. G. Kaggwa. C. S. Ssewajje. T. J. Wagideso. D. Ojur. K. J. Birakwate. N. Orode. L. S. Opedo. A. B. Okulu.

MECHANICAL AGRICULTURAL DEVELOPMENT SCHEMES—*continued*

<i>Title</i>					<i>Name</i>
<i>Assistant Agricultural Officers—continued</i>	..	..	..	..	M. D. Macleod. W. M. K. Permain. S. H. C. Foye. S. J. Haywood. R. W. R. Davies. F. J. Pitkin. J. R. Wickham. J. A. Cullen. G. C. Evans. A. L. Bailey. R. A. Fox. R. G. Leonard. P. M. Handley. V. B. Majerus. R. M. Batterbee. J. F. Fuller. J. B. Whitting. S. M. Brown. J. W. Rennie. J. Gibbs. J. C. Rip. D. W. Perkin. H. G. Stableford. P. R. Reed. A. Barlow.
<i>Senior Agricultural Mechanics</i>	..	..	..	..	(<i>Three Vacancies</i>).
<i>Agricultural Mechanics</i>	..	..	..	..	S. M. K. Kiwanuka. H. Y. Kizza. A. N. Patel. C. M. Kisosonkole. F. Opita. R. A. O. Ellam. T. Scrimsbaw. P. D. L. Roberts. R. G. Holden. J. G. Lloyd. M. J. Warner. N. Carter. R. J. J. Murray.
<i>Senior Field Officer (Agriculture)</i>	..	..	..	..	V. J. Chantler.
<i>Field Officers</i>	..	..	..	..	J. W. Muzira. S. W. O. Sorenson. C. D. Ripamonti.
<i>Technical Stores Controller..</i>	..	..	..	..	D. B. Edwards. S. B. Thaker.

3. AGRICULTURAL EDUCATION DIVISION

	Title					Name
<i>Principals, Agricultural Colleges</i>	..	..	..	..	..	P. E. K. Sibyetekerwa. (One vacancy).
<i>Agricultural Officers</i>	..	..	..	..	..	A. K. Osuban. E. A. Odhuba. A. R. Dunbar. A. D. R. Ker. R. A. Irigiei. J. C. M. Ddungu. B. Onaba.
<i>Lecturers</i>	..	..	..	..	..	J. Waibale. V. N. Mwoga. G. G. Tuckel. P. M. Goode.
<i>Principal Assistant Agricultural Officer</i>	..	..	..	..	..	P. Sempa.
<i>Senior Assistant Agricultural Officers</i>	..	..	..	..	..	R. M. Baker. N. G. Tuck. F. Baterman.
<i>Laboratory Technicians</i>	..	..	..	..	..	M. Lukoto. J. E. Egeru.
<i>Assistant Agricultural Officers</i>	..	..	..	..	..	E. Kemba. Miss M. Nasimiyu. M. A. Hudda. D. M. Elletu. Miss M. Mutonyi. J. L. K. Isabirye. A. Akishule. M. W. Okot. K. S. N. Nkuluse. J. Nsereko. C. Ngura-Akiki. V. Kasenge. J. D. Lewis. D. Selderath. M. P. Stickney.

4. AGRICULTURAL RESEARCH DIVISION

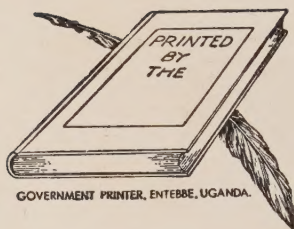
<i>Chief Agricultural Research Officer</i>	..	..	..	..	..	J. E. Hardy.
<i>Principal Research Officers</i>	..	..	..	..	..	(Four vacancies).
<i>Senior Research Officers</i>	..	..	..	..	..	S. K. Mukasa. J. C. Davies. J. F. Harrop.
<i>Nematologist</i>	..	..	..	..	..	D. M. Patel.
<i>Horticulturist</i>	..	..	..	..	..	A. Scherer.
<i>Entomologists</i>	..	..	..	..	..	D. N. McNutt. J. Ogwang. E. Fonseca.

AGRICULTURAL RESEARCH DIVISION—continued

Title							Name
<i>Chemists</i>	..	..	..	..	..	..	H. L. Foster. M. A. D'Costa.
<i>Botanists</i>	..	..	..	..	..	..	E. K. Beraho. N. M. Sembwa-Bunya. W. M. Wandwasi. Miss M. E. Parry. S. Matovu.
<i>Soil Survey Officer</i>	..	..	..	..	..	..	A. H. Buddingh.
<i>Biometrician</i>	..	..	..	..	..	..	D. T. Tadie.
<i>Livestock Breeder</i>	..	..	..	..	..	..	T. H. Stobbs.
<i>Agronomists</i>	..	..	..	..	..	..	G. E. D. Tilley. E. R. Tiharuhandi. R. O. Wheeler. B. W. Wendt. R. K. Tremlett. R. G. White. V. L. L. S. Machado.
<i>Principal Assistant Agricultural Officers</i>	..	..	..	..	..	..	A. Kamya. H. D. Mubiru. Y. K. Musisi. W. P. Beattie.
<i>Spraying Machinery Technologist</i>	..	..	..	..	..	..	<i>Vacant.</i>
<i>Assistant Agricultural Officers and Field Officers</i>	..	..	..	..	..	..	M. K. Katumba. A. M. Alarakhia. C. K. Wangi. J. B. Kavuma. A. M. Kirya. W. Kizito. J. B. Kyamuhangire. A. W. Butamanya. S. M. Jetha. O. D. Magumbye. D. N. Bafakuzara. D. E. M. Clegg. P. W. Newhouse. J. A. Mullin. R. N. Peters.
<i>Curator, Botanic Gardens</i>	..	..	..	..	..	..	Z. K. Kateregga.
<i>Spectrographer</i>	..	..	..	..	..	..	U. V. Oza.
<i>Librarian</i>	..	..	..	..	..	..	B. W. K. Matogo.
<i>Statistics Records Officer</i>	..	..	..	..	..	..	L. F. Lobo.
<i>Laboratory Technicians</i>	..	..	..	..	..	..	P. K. Nzobindo. G. M. Mpairwe. M. Luyiira. J. A. Olinga. E. Mayanja-Kasirye. Z. M. Nyirra.

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